CDX-900/900RDS

SERVICE MANUAL

US Model
CDX-900

AEP Model
CDX-900RDS

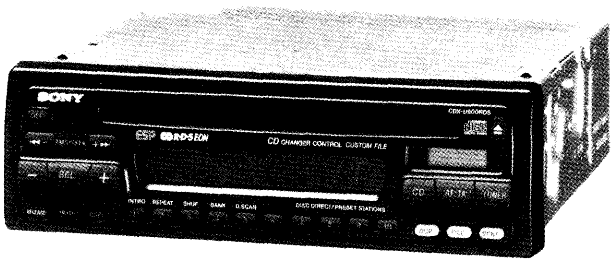

Photo: CDX-900RDS model

- Refer to another service manual RM-X32/X33 for CDX-900/900RDS supplied remote commander.

Model Name Using Similar Mechanism	NEW
CD Drive Mechanism Type	MG-215-130

SPECIFICATIONS

CD player section

System	Compact disc digital audio system
Signal-to-noise ratio	100 dB
Frequency response	10 - 20,000 Hz
Wow and flutter	Below the measurable limit
Laser Diode Properties	
Material	GaAlAs
Wavelength	780 nm
Emission duration	Continuous
Laser output power	Less than 44.6 µW*

* This output is the value measured at a distance of 200 mm from the objective lens surface on the Optical Pick-up Block.

Tuner section

FM

Tuning range	US model: 87.5 - 107.9 MHz AEP, German model: 87.5 - 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Sensitivity	8 dBf (75 ohms)
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 70 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 - 15,000 Hz
Capture ratio	2 dB

MW/LW(SW) (AEP, German model only)

Tuning range	MW: 531 - 1,602 kHz LW: 153 - 281 kHz (AEP model) SW: 5,950 - 6,205 kHz (German model)
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	MW: 30µV LW: 50µV (AEP model) SW: 50 µV (German model)
Signal-to-noise ratio	55 dB
Harmonic distortion at 1 kHz	0.3%

—Continued on next page—

FM/AM COMPACT DISC PLAYER
CDX-900

FM/MW/LW (SW) COMPACT DISC PLAYER
CDX-900RDS

使用時は添付資料も参照のこと
Refer to the additional documents.

SONY®

AM (US model only)

Tuning range	530 – 1,710 kHz
Antenna terminal	External antenna connector
Intermediate frequency	10.71 MHz/450 kHz
Sensitivity	30 µV

General

Output lead	Power antenna relay control lead Power amplifier control lead
Tone controls	Bass ± 8 dB at 100 Hz Treble ± 8 dB at 10 kHz
Loudness	+6 dB at 100 Hz +6 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 186 × 57 × 180 mm (w/h/d) not incl. projecting parts and controls
Mounting dimension	Approx. 182 × 53 × 152 mm (w/h/d) not incl. projecting parts and controls
Mass	Approx. 1.5 kg
Supplied accessories	Rotary commander RM-X33 (1) Mounting hardware (1 set) Power connecting cord (1) Front panel case (1)

Design and specifications subject to change without notice.

SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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SECTION 1
GENERAL

This section is extracted from instruction manual.

Features

General

- Supplied with **the rotary commander.**
- Supplied with **the wireless remote commander.**
- **Detachable front panel** enables you to take the front panel away with you when you leave your car. (page 16)
- **Caution alarm** will be activated if you turn off the ignition key without removing the front panel from the unit.
- Switchable **two color illumination (amber and green)**. (page 11)
- Proveded with a digital 24-hour clock. (page 17) (AEP, German model only)
- Provided with a digital 12-hour clock. (US model only)
- Line outputs for connecting an optional power amplifier.
- **Telephone-mute function** for decreasing the volume automatically with a telephone call.

Tuner section

- Up to 40 stations can be preset: 20 stations on FM and 10 stations each on MW and LW (SW). (AEP, German model only) (SW for the German model only)
- Up to 30 stations can be preset, 20 stations on FM and 10 stations AM. (US model only)
- BTM (Best Tuning Memory) function Automatically selects and stores the stations with strong signals on the preset number buttons in the order of frequency. (page 29)
- The information services of FM RDS station can be received. (page 32) (AEP, German model only)
- Compatible with the RDS features such as EON (Enhanced Other Networks), AF (Alternative Frequency), TA (Traffic Announcement) and CT (clock Time) function. (page 33) (AEP, German model only)
- Provided with a FM diversity reception system for a better radio reception.

CD section

- **1 bit DAC (Digital-to-Analog Converter) for a clear sound reproduction.**
- **Quick recovery mechanism** for preventing sound skipping.
- **Intro scan function** for playing the first 10 seconds of each track. (page 20)
- **Repeat play function** for listening to a currently playing track repeatedly. (page 21)
- **Shuffle play function** for playing track in a random order. (page 22)
- **Several Sony CD changers (not supplied) can be connected and controlled** by the use of the Sony source selector (not supplied) with the unit.
- **Custom file function*** for displaying the title of each disc and setting a PLAY/SKIP mode on each track. (page 23)
- **Disc scan function*** for playing the first 10 seconds of all the discs. (page 20)

* When the optional CD changer(s) is connected

DSP control section (when the optional Digital Pre-amplifier XDP-U50D is connected)

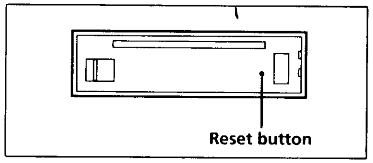
- **Surround menu** enables you to select different soundfields inside your car.
- **DSP custom file function** enables the discs to be played in the customized DSP modes. (page 48)
- **LSM function** enables the programs to be played with the preset surround menu. (page 50)

TV tuner section (when the optional TV monitor and TV tuner unit are connected) *(US model only)*

- **Station memo function** for displaying the names of TV stations on the TV monitor (page 33).
- **List up function** enables CD titles and the contents of the preset memory to be displayed on the TV monitor (page 28, 35).
- **Simultaneous play function** for listening to CD while watching the TV or video (page 46).

Precautions

- Before operating the unit for the first time or after replacing the car battery, press the reset button with a ball-point pen etc., then start operating the unit.



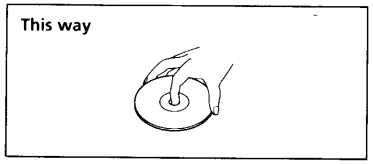
- If your car was parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.
- If no sound comes from the speakers of a 2-speaker system, set the fader control to the center position.

Note on moisture condensation

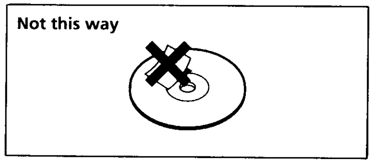
On a rainy day or in a very damp environment, moisture in the atmosphere may condense on the lenses inside the unit. Should this occur, the unit may not operate properly. In such a case, remove the disc inside and wait for about an hour or so until the moisture has evaporated.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

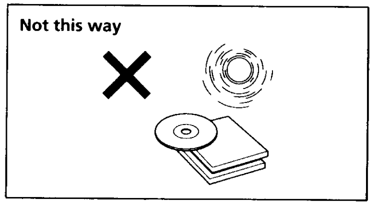
Notes on Compact Discs



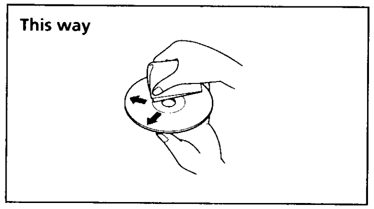
A dirty or defective disc may cause sound dropouts in playing. To enjoy optimum sound, handle the disc as follows.
Handle the disc by its edge, and to keep the disc clean, do not touch the surface.



Do not stick paper or tape on the labeled surface.



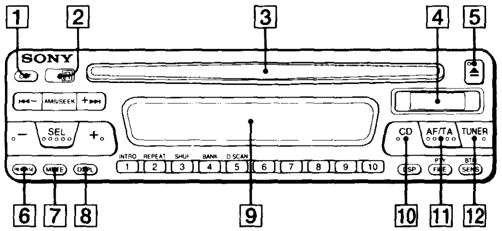
Do not expose the discs to direct sunlight or heat sources such as hot air-ducts, or leave them in a car parked in direct sunlight where there can be a considerable rise in the temperature inside the car.



Before playing, clean the discs with an optional cleaning cloth. Wipe each disc from the center of the disc outward.
Do not use solvents such as benzine, thinner, commercially available cleaners or antistatic spray intended for analog discs.

Location and Function of Controls

Main unit



Refer to the pages in ● for details.

1 **OFF button**
Press to turn off the unit.

2 **Receptor for the wireless remote commander**

3 **Disc insertion slot**

4 **Sub (current mode) display window**
Displays the currently selected program source (CD/FM/MW/LW (SW)) and the DSP mode.

5 **≜ (eject) button ⓲**

6 **RELEASE (front panel release) button ⓰**

7 **MUTE button**
Press to mute the sound momentarily.
Press again to restore the same volume level.
This button is also canceled in the following cases:
- when the + side of the (−_/+) button or the OFF button is pressed.
- when ejecting a CD by pressing the ≜ button during CD play.
- when the ignition key of your car has been turned to the OFF position for more than eight seconds.

8 **DSPL (display mode change/time set) button**
Each time the button is pressed, the display on the main display window changes as follows:

AEP, German model only:

CD	Elapsed playback time → Disc title*1 → Clock
Radio*2	Frequency → Clock

US model only:

CD	Elapsed playback time → Disc title* → Clock
Radio	Station name* → Frequency → Clock
TV	Channel number → TV station* → Clock

*1 If the title has not being registered, "- - - - - - - -" indication will appear on the display window.
*2 See page 35 about the display modes when the RDS function is in operation.
(AEP, German model only)

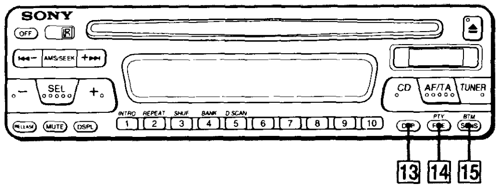
9 **Main (Current operation) display window**
Displays the information of the currently selected program source, the elapsed playing time of a disc and the current time etc.

10 **CD (disc play/CD changer select) button ⓲ ⓳**

11 **AF/TA (alternative frequency/traffic announcement) button**
(AEP, German model only)
Each time the button is pressed, the function changes in order of:
AF → TA → AF/TA → none → AF

11 **TV (television/video select) button*1**
(US model only)
Each time the button is pressed, the mode changes in order of:
TV (television pictuer) → VIDEO 1 (video pictuer) → VIDEO 2*2 → TV
*1 Only when the potional TV tuner uniat is connected.
*2 Only when the rear TV monitor is connected and the "VIDEO 2" mode is selected.

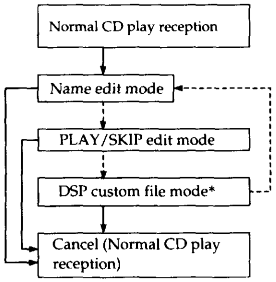
12 **TUNER (radio on/band select) button**
Each time the button is pressed, the band changes in order of:
(AEP, German model only)
FM1 → FM2 → MW → LW (SW)
(US model only)
FM1 → FM2 → AM → FM1



13 **DSP (Digital Signal Processor mode on • off/select) button**
If pressed lightly with the optional XDP-U50D connected, this button will function as the DSP mode on/off button. If you press for more than one second, the unit will enter the DSP select/adjust mode. Each time you press the button, the DSP select/adjust mode and the display on the sub display window will change as follows:

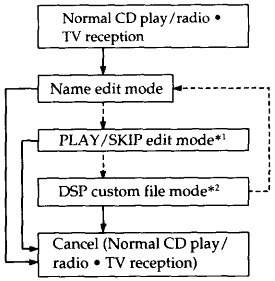
Sub display window	DSP select/adjust mode
SUR	Surround menu select/ Effect level adjust
LP 1	Listening position adjustment
SUB	Subwoofer tone/volume adjustment
BAS	Bass adjustment
TRE	Treble adjustment

14 **FILE (custom file mode select • set/list up)/PTY (program type) button**
(AEP, German model only)
Each time the button is pressed, the mode changes as follows:
→ : Press the button for more than two seconds.
--→ : Press the button lightly.



* The unit enters this mode only when the DSP custom file function is activated.

14 **FILE (custom file mode select • set/list up) button (US model only)**
Each time the button is pressed, the mode changes as follows:
→ : Press the button for more than two seconds.
--→ : Press the button lightly.



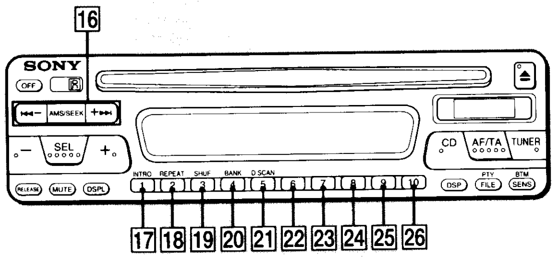
Normal CD play/radio • TV reception
Name edit mode
PLAY/SKIP edit mode*1
DSP custom file mode*2
Cancel (Normal CD play/ radio • TV reception)

*1 The unit enters this mode only when the CD custom file function is activated.
*2 The unit enters this mode only when the DSP custom file function is activated.

If the button is pressed only lightly while the optional TV tuner and monitor are connected, the information of the disc and radio/TV will be displayed on the TV monitor.

15 **SENS (sensitivity)/BTM (Best Tuning Memory) button ㉙ ㉚**

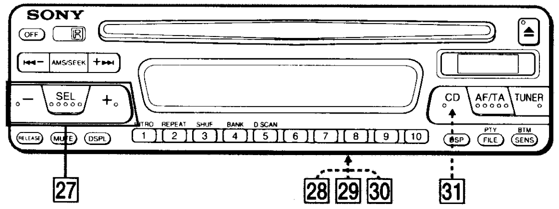
Location and Function of Controls



	During CD play	**During Radio reception**
16 AMS/SEEK button |◄◄– AMS/SEEK +►►|	**AMS (Automatic Music Sensor) function** +►►| : Press once to locate the beginning of the next track. |◄◄– : Press once to locate the beginning of the currently playing or a previous track. Press repeatedly to locate previous or succeeding tracks.	**Automatic tuning ㉘** (Press lightly.)
	Manual seach Keep either side of the button pressed until the desired part of a track is located. +►►| : To fast-forward |◄◄– : To fast-reverse	**Manual tuning ㉘** (Press and hold.)

	During CD play	**During Radio reception**
17 INTRO button INTRO 1	**Intro scan ⑳**	**Preset number buttons ㉚ ㉛**
18 REPEAT button REPEAT 2	**Repeat play ㉑**	
19 SHUF button SHUF 3	**Shuffle play ㉒**	
20 BANK button BANK 4	**Bank play ㉗**	
21 D.SCAN button D.SCAN 5	**Disc scan ⑳**	
22 6	—	
23 7	—	
24 8	—	
25 9	—	
26 10	—	

The buttons 17-26 also function as the direct disc selection buttons during CD play.
Press the button whose number corresponds with the desired disc number for more than one second.



27 [– SEL +] button

Normally, either side of the [– +] button is pressed to control the volume. Pressing the SEL button changes the mode as follows:

→ SUB (sub output level) → BAS (bass) → TRE (treble)
VOL (volume) ← FAD (fader) ← BAL (balance) ←

Press either side of the [– +] button (to adjust the level) within three seconds, or the volume mode will return.

Sub display window	SEL	[– +]	
	Control mode	**Press – side**	**Press + side**
SUB	SUB output level control	For less volume	For more volume
BAS	Bass control*1	For less bass	For more bass
TRE	Treble control*1	For less treble	For more treble
BAL	Balance control*2	To decrease the right speaker's volume	To decrease the left speaker's volume
FAD	Fader control*1, 3	To decrease the rearspeaker's volume	To decrease the front speaker's volume
VOL	Volume control	For less volume	For more volume

*1 The level of the SUB output cannot be adjusted.
*2 The level of the SUB output be adjusted as well.
*3 When the optional XDP-U50D is connected, the fader settings can be set separately for the DSP on mode and DSP off mode.
When you use a stereo graphic equalizer (not supplied), set the fader control to the center position and adjust the level with the equalizer.

28 FM DIVERSITY switch (located on the bottom of the unit)
See "FM DIVERSITY Switch" in the installation/connections manual.

29 POWER SELECT switch (located on the bottom of the unit)
See "POWER SELECT Switch" in the Installation/Connections manual.

30 DIGITAL/ANALOG switch (located on the bottom of the unit)
See "DIGITAL/ANALOG switch" in the Installation/Connections manual.

31 Reset button (located on the front side of the unit hidden by the front panel)
Press this button when you use this unit for the first time, when you have changed the car battery, or when the buttons of this unit do not function properly.

When the positions of switches 28 to 30 have been changed, be sure to press the Reset button after connecting power.

Changing the illumination color

Press the INTRO (1) button while pressing the (SEL) button. You can choose the color between amber and green.

When listening at low volume with enhanced bass and treble (loudness function)

Press the REPEAT (2) button while pressing the (SEL) button. To cancel the mode, press these buttons once more. (When the optional XDP-U50D is connected, you cannot use this function.)

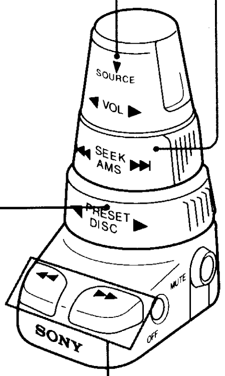
Muting the beep tone

Press the (6) button while pressing the (SEL) button. To obtain the beep tone again, press these buttons once more.

Location and Function of Controls

Rotary Commander (RM-X33)

SOURCE selector ☝/VOL (volume) control ⟳
- At each pressing, the button changes the source.
- Turn to adjust the volume.



SEEK/AMS control ⟳

During CD play

Locates the beginnings of the tracks (AMS function).

During Radio reception

Automatically tunes to a station. When a station is tuned in, the search stops automatically.

PRESET/DISC control ⟳

During CD play

Changes the discs when the CD changer(s) is(are) connected.

During Radio reception

Receives the stations memorized on the preset number buttons. (Preset search function)

◀◀/▶▶ (Manual search buttons) ☝

During CD play

Locates the desired part of a track.

During Radio reception

Manually searches a station.

⟳ ***Press***	☝ ***Turn***

When the POWER SELECT switch is set to the OFF position, the unit cannot be operated with the commander, unless you turn on the unit first.

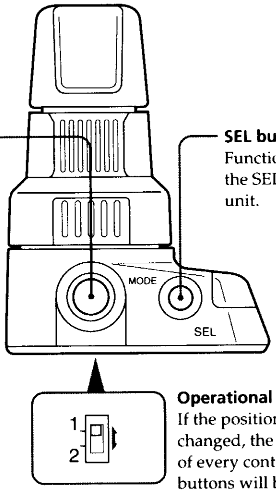
MODE button ☝

During CD play

Selects CD changers when several CD changers are connected.

During Radio reception

At each pressing, the button changes the band.



SEL button ☝

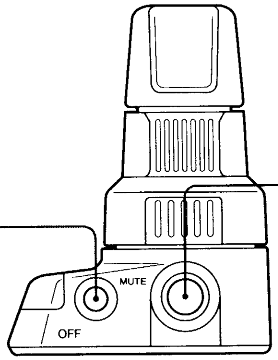
Functions in the same way as the SEL button on the main unit.

Operational direction switch

If the position of the switch is changed, the operational direction of every control and the ◀◀/▶▶ buttons will be the other way around. Select the position with a jeweller's screw-driver etc.

OFF button ☝

Press to turn off the unit.



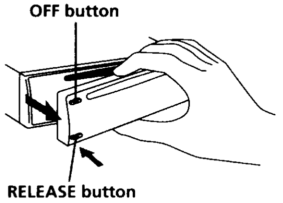
MUTE button ☝

Press to mute the sound momentarily.

Detaching and Attaching the Front Panel

Detaching the Front Panel

Before detaching the front panel, be sure to press the OFF button first. Then press the RELEASE button to open up the front panel and detach the panel by pulling it towards you as illustrated.

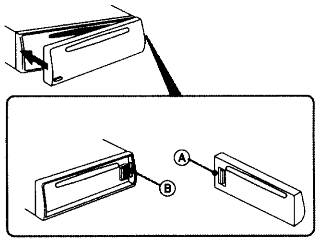


Be sure not to drop the front panel when detaching it from the unit.

Note
The display window may become warm while the unit is operated, however, this is not a sign of a malfunction.

Attaching the Front Panel

Apply the right hand side of the front panel to the unit by attaching the part Ⓐ of the front panel to the part Ⓑ of the unit as illustrated and push until it clicks.



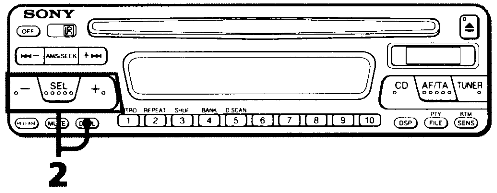
Do not press hard or apply excessive pressure on the display window of the front panel.

Caution alarm

If you turn the ignition key to the OFF position without removing the front panel, the caution alarm will be activated and a beep tone will be heard for a few seconds (only when the POWER SELECT switch is set to the ON position).

Notes
- Make sure that the front panel is the right way up when attaching it to the unit as it cannot be attached upside down.
- When attaching the front panel, do not press it hard against the unit. It can be easily attached by pressing lightly.
- Never leave the detached front panel in your car if it is parked in direct sunlight. There could be a considerable rise in temperature inside the car.
- When you carry the front panel with you, put it in the supplied front panel case.

Setting the Clock

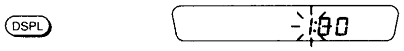


The clock has a 24-hour digital indication.

For example, to set it to 10:08

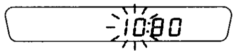
1 Turn the ignition key to the ON position.

2 Press the DSPL button for more than two seconds.

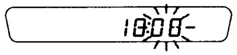


While keeping the DSPL button pressed, proceed with the following:

Press either side of the (− +) button to set the hour digits. (to go back) (to go forward)



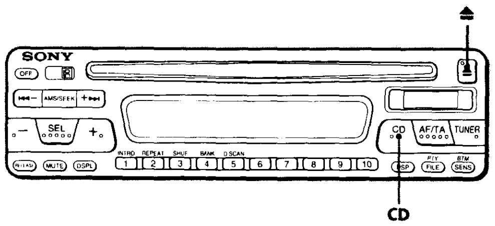
Press the SEL button.
Press either side of the (− +) button to set the minute digits. (to go back) (to go forward)



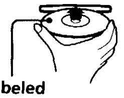
3 The clock activates when you take your finger off the DSPL button.

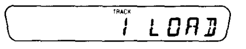
Note
If the POWER SELECT switch on the bottom of the unit is set to the OFF position, the clock cannot be set unless the power is turned on. Set the clock after you have turned on the radio, or started CD play.

Playing a CD



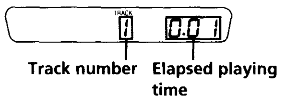
Insert a disc into the slot.





When a disc is inserted, CD play will automatically start.

If a disc is already inserted, press the CD button.



Ejecting the Disc

Press the ≜ button.

If you press the TUNER button during CD play

The CD play will stop automatically and the tuner will be activated.

Important

Since the CD system offers a wide dynamic range, the peaks of the high level inputs are recorded with high fidelity and the noise level is very low. Do not turn up the volume while listening to a section with no audio signals or very low level inputs. If you do so, the speakers may be damaged when a section with a peak signal is played.

Notes

- If a disc is already loaded in the unit, never try to insert another disc.
- To play a 8 cm CD, use the Sony CSA-8 adaptor (not supplied).

At the end of the disc

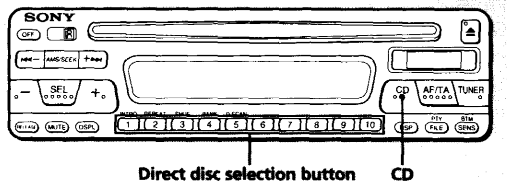
The track number returns to "1" and CD play is repeated from the beginning of the disc.

Note

If you leave the ejected disc in the disc insertion slot after you have pressed the ≜ button, the disc will be automatically retracted into the unit after about 15 seconds in order to protect it.

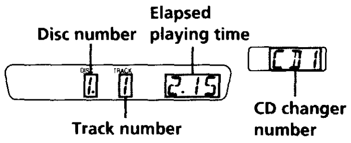
CD Changer Operation

(With the optional CD changer(s) connected)



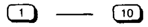
Press the CD button.

CD play starts.



Locating a Disc Directly

Press the direct disc selection button of your choice for more than two seconds during CD play.



Selecting a CD changer or the CD player (the main unit) to operate

While checking the CD changer/player number indications on the display window, press the CD button. Each time you press the button, the indication changes cyclically as follows:

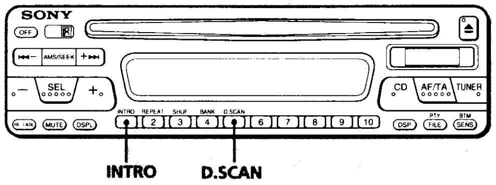
For example, when two CD changers are connected

→ CD1 (CD changer 1) → CD2 (CD changer 2) → CD3 (CD player) ┐

Notes

- If a disc is not inserted in the CD player (the main unit), you will not be able to select the CD player by pressing this button.
- If more than two CD changers are connected, the number indication for the CD player (the main unit) will always be the last one.

Playing in Other Modes



Listening to the first 10 seconds of each track — *Intro Scan Function*

Press the INTRO 1 button during CD play by either the CD player or the CD changer.

The first 10 seconds of all the tracks on the currently selected disc will be played in order.
With the optional CD changer(s) connected, after the first disc has been played with the intro scan function, the first 10 seconds of the subsequent disc in the same CD changer will be played.
When the first 10 seconds of the last disc in the first CD changer have been played, the first disc in the next CD changer (if more CD changers than one are connected) or the disc in the CD player (the main unit) will be played with the next number displayed on the display window.

Note
If the INTRO button is pressed during a shuffle play, the first 10 seconds of each track will be played randomly.

To cancel the intro scan function
Press the INTRO button again.

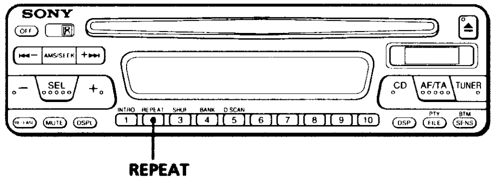
Searching for a Desired Disc by Listening to the First 10 Seconds of Each Disc

— Disc Scan Function (with the optional CD changer(s) connected)

Press the D.SCAN 5 button during CD play by the CD changer.

The first 10 seconds of all the discs in the CD changers and the CD player will be played in order. When the last disc in the CD changer has been played, the disc in the CD player will be played.
If more CD changers than one are connected, the first disc in the next CD changer or the disc in the CD player (the main unit) will be played with the next number displayed on the display window.

To cancel the disc scan function
Press the D.SCAN button again.



Playing a Disc Repeatedly

— Repeat Play Functions

Playing the currently selected track repeatedly — Track repeat

Press the REPEAT 2 button lightly to get the "REP 1" indication during CD play.

When the track is over, the CD play will be repeated from the beginning of that track.

Playing the currently selected disc repeatedly — Disc repeat (when the optional CD changer(s) are connected)

Press the REPEAT 2 button lightly to get the "REP 2" indication during CD play.

When the last track on the currently selected disc is over, the CD play is repeated from the beginning of that disc.

Playing the discs in the CD changer repeatedly — CD changer repeat (when the optional CD changer(s) are connected)

Press the REPEAT 2 button lightly to get the "REP 3" indication during CD play.

When the last disc in the CD changer has been played, the CD play will be repeated from the first disc in the currently selected CD changer.

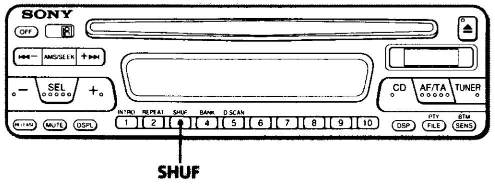
The function of the REPEAT button changes cyclically as follows:

When the CD changer is not connected

REP 1
(Track repeat)
↓
Cancel (Normal CD play mode)

When the CD changer is connected

REP 1
(Track repeat)
↓
REP 2
(Disc repeat)
↓
REP 3
(CD changer repeat)
↓
Cancel (Normal CD play mode)



Playing the Discs Randomly

— Shuffle Play Functions

Playing the tracks on the currently selected disc randomly — Disc shuffle play

Press the (3) button lightly to get the "SHUF 1" indication during CD play.

Playing each track on each disc in the currently selected CD changer randomly — CD changer shuffle play (when the optional CD changer(s) are connected)

Press the (3) button lightly to get the "SHUF 2" indication during CD play.

Playing each track on each disc in all the CD changer(s) connected randomly — All shuffle play (when the optional CD changer(s) are connected)

Press the (3) button lightly to get the "SHUF 3" indication during CD play.

The function of the SHUF button changes cyclically as follows:

When the CD changer is not connected

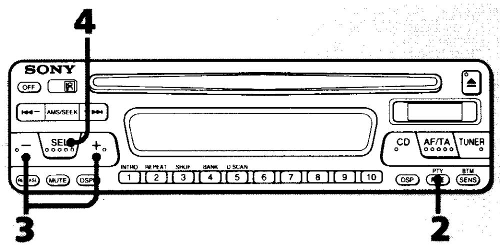
SHUF 1
(Disc shuffle)
↓
Cancel (Normal CD play mode)

When the CD changer is connected

SHUF 1
(Disc shuffle)
↓
SHUF 2
(CD changer shuffle)
↓
SHUF 3
(All shuffle)
↓
Cancel (Normal CD play mode)

Displaying the Title of Each Disc

— Disc Memo Function (with the optional CD changer(s) connected)

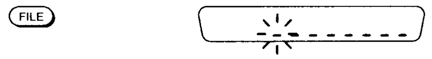


You can put a title of your own choice onto a disc (one title per disc). The title can be displayed on the display window while the disc is being located and played.

Putting Your Personalized Titles onto the Discs

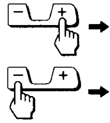
1 Play the disc that you wish to title.
(See page 19)

2 Press the FILE button for more than two seconds to enter the name edit mode.



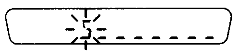
Name edit mode

3 Press either side of the (−/+) button to select the desired characters.
Each time you press either side of the (−/+) button, characters, symbols etc. change in following order.



→A→B→C→...→X→Y→Z→0→1→2→3→...

→ \ →(→)→ \ → / → * → − → + → 9 → ...



4 Press the SEL button after locating the desired character.

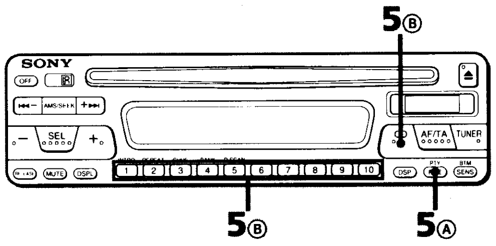
The flashing part moves to the next space on the right. Repeat steps 3 and 4 to enter the entire titles. Up to eight characters can be used per disc.

(Continued on next page)

Note
This function works only when (a) CD changer(s) with custom file feature is (are) connected.

Notes
- If you press the SEL button when the eighth character (farthest right character) is flashing, the flashing part goes back to the first character (farthest left character).
- If you wish to put a blank space after a character, select "_" (under-bar).

Displaying the Title of Each Disc



5 **Ⓐ To return to the normal CD play mode**
Press the FILE button for more than two seconds.

FILE

Ⓑ To continue to put titles onto the discs

CD

1 — 10

(Press for more than one second)

If you press the CD button, the next CD changer will be selected. (when two or more CD changers are connected)

Changing a title

Play the disc whose title you wish to change and repeat steps 2 to 5.

When you change the title, the PLAY/SKIP settings of the bank function or any setting of the DSP custom file function will not be erased at the same time.

Erasing a title

1 **Select the CD changer and play any disc.**

2 **Press the FILE button for more than two seconds to enter the name edit mode.**

3 **Press the SEL button while pressing the 5 button.**

4 **Press either side of the – / + button to select the title that you wish to erase.**

5 **Press the SEL button for more than two seconds.**
Now the title and the PLAY/SKIP settings are erased.
Repeat step 4 and step 5 if necessary.

6 **Press the FILE button for more than two seconds.**
The unit returns to the normal CD play mode.

If you erase the title, the PLAY/SKIP settings of the bank function and the settings of the DSP custom file function will be erased as well.

The alternative method to erase a title
You can erase a title by selecting eight "_"s (under-bars) as described in step 3 of "Putting Your Personalized Titles onto the Discs" (page 23).

Displaying the Title

Press the DSPL button.

DSPL

SCHUBERT

Title display modes

While loading the discs, whatever display mode the unit is in, the indication on the main display window automatically changes as follows:

→ The title of the disc (two seconds) → Disc and track number (two seconds) → Currently selected display mode (two seconds)

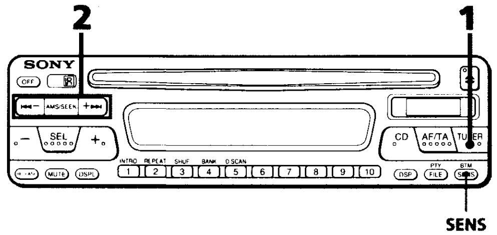
Custom file function

You can register the customized titles and the PLAY/SKIP settings on up to 110 discs* per CD changer (custom file function). These settings are stored in the memory of the CD changer. Therefore, even if you take a custom-filed disc out of the CD changer, you can still use the same custom file function the next time you play that disc in the same CD changer. Furthermore, if your system has several CD changers connected, you can play that disc in another CD changer and still use the same custom file function, provided that the CD changers are inter-connected with the Bus(Unilink) cables.

* If you try to register more than 110 discs, the unit will display the "FULL" indication and will not accept the command for custom-filing. In this case, you will have to erase other discs from the CD changer memory before you enter the new ones (page 24).

Note
While the discs are being loaded inside the CD changer, their registered titles may not appear on the display window immediately.

Tuning in a Station



Searching for the Stations Automatically

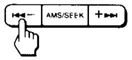
— Automatic Tuning

1 Select the desired band.

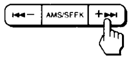
TUNER

FM1

2 Press either side of the SEEK button lightly.



For lower frequencies



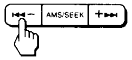
For higher frequencies

The scanning stops when a station is received. Press either side of the button repeatedly until the desired station is received.

Tuning in by Adjusting the Frequency

— Manual Tuning

Select the desired band, then press and hold either side of the SEEK button.



For lower frequencies

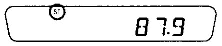
For higher frequencies

Release the button when the desired station is received.

PREVENTING ACCIDENTS!

While you are driving, the use of the Automatic Tuning and the Memory Preset Tuning is recommended instead of the Manual Tuning.

While receiving FM broadcasting



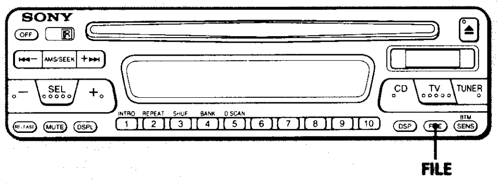
The "ST" indication will appear when an FM stereo program with sufficient signal strength is tuned in. The program will be received in stereo.

Avoiding the automatic tuning from stopping on stations too frequently (Local Seek Mode)
Press the SENS button lightly to get the "LCL" indication. Only the stations with relatively strong signals can be tuned in. The local seek mode functions only when the Automatic Tuning is in operation.

If FM stereo broadcasting is difficult to receive (Monaural Mode)
Press the SENS button lightly to get the "MONO" indication. The sound will improve, but it will become monaural.

Displaying the Stored CD's Information on the TV Monitor *(US model only)*

(When the Optional TV Tuner Unit and TV Monitor are Connected)

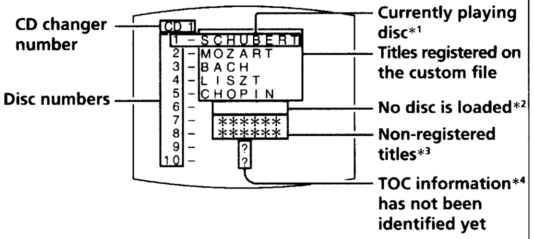


The titles of the discs loaded and other information stored in the currently selected CD changer on the main unit will be listed on the TV monitor.

Press the FILE button lightly during CD play.

FILE

Example: When the CD changer 1 is selected



*1 The name of the currently playing disc will be displayed in magenta.
*2 A blank space will be displayed if there is a disc number representing an empty slot in the disc magazine.
*3 If a title is registered on the custom file, that name will be displayed. If not, "******" will be displayed in its place.
*4 "?" will be displayed if the TOC information of the disc has not been collated with the custom file.

Turning off the display

Press the FILE button once more.

Notes
- It may take some time before all the displays come onto the screen.
- The contents of the preset memory cannot be listed when the unit is in the simultaneous play mode (page 46).

Overview of the RDS Function

(AEP, German model only)

What is RDS?

The RDS (Radio Data System) is a radio digital information system developed and introduced in 1987 by the EBU (European Broadcasting Union). Using the 57 kHz sub-carrier of FM broadcasting, the RDS enables you to receive a variety of information such as station names and traffic information. It also offers some useful functions such as automatic re-tuning of the best available signal carrying the chosen program.

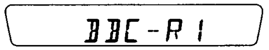
The RDS digital data includes the followings:

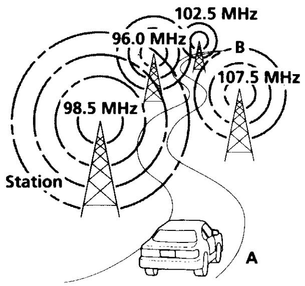
PI	Program Identification
PS	Program Service Name
AF	List of Alternative Frequencies
TP	Traffic Program
TA	Traffic Announcement
PTY	Program Type
EON	Enhanced Other Networks
CT	Clock Time

The following functions are available with this unit using the RDS data. Refer to the marked pages for the operational instructions.

Station Service Name Display *(page 35)*

This function displays the name of the station which is currently tuned in on the main display window.





Automatic Re-tuning — *AF Function (page 36)*

This function automatically re-tunes in a station with a relatively stronger signal within the same broadcasting network using the PI and AF data.

The illustration above shows an example of a car passing through an area with four stations of the same broadcasting network between points A and B.

As the car moves on, the reception frequency of the station in the network changes from 98.5 MHz to 107.5 MHz then to 96.0 MHz and to 102.5 MHz.

By using the AF function, the driver will be able to keep listening to a program in the same broadcasting network without tuning in the station manually every time he enters a different frequency zone between points A and B.

Traffic Announcement Reception

— TA Function (page 38)

This function searches and stands by for a traffic information station using the TP and TA data.

Using this function, the unit automatically searches the station and changes its mode to receive the traffic announcement when the broadcasting starts while you are listening to CD play.

Overview of the RDS Function

(AEP, German model only)

Enhanced Other Networks — *EON Function* (pages 37 and 38)

The EON function extends the faculty of the TA and TP function by enabling the unit to track other stations transmitting the EON data while it is tuned to a network station.

Note
Even if you are listening to a network station, the unit will automatically monitor local EON stations. When there is a local traffic announcement, the unit will automatically tune to that station and will re-tune to the previous station when the broadcast is over.

Setting the Clock Using the CT Function of the RDS

The CT function of the RDS enables the built-in clock in the unit to automatically synchronize with the CT data being received by the tuner section of the unit.

To activate the CT function, press the 7 button while pressing the SEL button. The "CT" indication appears on the display window.

CT 1:00

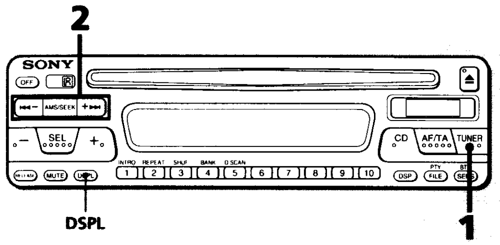
To cancel the function, press these buttons once more.

If the CT function is being activated while you adjust the clock manually, the clock will be automatically adjusted by the CT data the next time the unit receives it.

Note
There may be cases when the CT function may not be activated even if an RDS station is being received.

Station Service Name Display

(AEP, German model only)



1 **Select the FM band.**

TUNER

FM 1

2 **Tune in a desired station by using the Automatic Tuning or Manual Tuning (page 28).**

AMS/SEEK

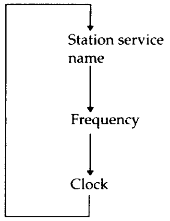
If the unit is set in the station service name display mode and a station transmitting the RDS data is received, the name of that station will be displayed on the main display window.

When the "------" indication appears on the main display window in the station service name display mode:
The received station is not an RDS station.

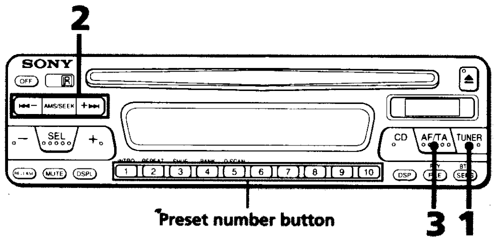
When the unit is in the frequency display mode and an RDS station is received:
The " ▮ "display appears to indicate that an RDS station is received. To find out the name of the station, press the DSPL button to change the display mode.

Notes
- The RDS data can be received only on the FM band.
- The RDS functions of this unit will not be activated if the FM station being received is not transmitting the RDS data. It may also not work properly in areas where the RDS transmissions are in the experimental stage.

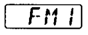
You can change the display mode by pressing the DSPL button
Each time you press the button, the display mode changes as follows:



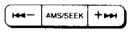
Automatic Re-tuning — AF Function (AEP, German model only)



1 Select the FM band.



2 Tune in a desired RDS station by using the Automatic Tuning or Manual Tuning (page 28).



3 Press the AF/TA button to get the "AF" indication.

The unit begins to search for an alternative station with a stronger signal in the same network from the AF data (List of Alternative Frequencies). If a stronger signal station is found, the unit retunes in that station. If no strong station is found, both the "NO AF" and the program station name indications flash.

Selecting REGIONAL ON or REGIONAL OFF

Press the AF/TA button for more than two seconds. The unit gives a confirmation beep. The "REGIONAL ON" or "REGIONAL OFF" indication appears on the main display window. (There may be cases that this function may not be activated in some areas especially in the United Kingdom and outside Germany.)

Notes

- When the "AF" indication appears on the display window, only the RDS stations can be tuned in by the Automatic Tuning.
- If the tuned in RDS station is not transmitting the AF data, this function will not work.
- If you press the AF/TA button while the MW or LW (SW) band is being tuned in, the FM1 band will be automatically selected.

Regional Programs

Sometimes a national radio network broadcasts regional programs. With the RDS function, you can switch the "regional checking" function to on (REGIONAL ON) or off (REGIONAL OFF).

REGIONAL ON:
    The tuner remains tuned to the current regional program.
REGIONAL OFF:
    The tuner may retune to another regional program in the network.

Network Stations Memory

When the unit stores an RDS station transmitting the AF data on a preset number button, it stores not only its frequency but also its PI, AF, PS and PTY data. The AF data carries the information of the list of the frequencies of the stations within the same broadcasting network. The unit will store the data in its memory whether the AF function is activated or not.

PI Sorting with the BTM Function

You can automatically store the RDS stations in order of their PI codes on the preset number buttons. If the AF function is activated when you initialize the BTM function (page 29), the RDS stations transmitting the PI data will be searched and stored in order on the preset number buttons. Likewise you can store the traffic information stations in the same way by TA function before activating the BTM function. (See page 38 about the TA function.)

Getting the Stored RDS Stations in Tune from the Broadcasting Networks

Be sure to press the preset number buttons after pressing the AF/TA button to activate the AF function. The AF function will select a better signal station by retuning within the network stations. If you press the preset number buttons without activating the AF function, you will not be able to use this function. In this case, you will only get the individual stations which were tuned in on the previous occasion. The unit will not retune to the other stations in the network even if they are stored in the memory.

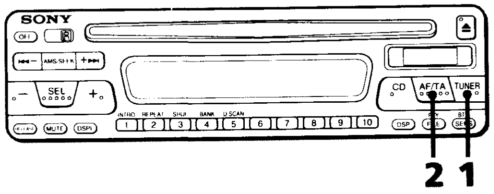
Local Link Function — United Kingdom Only

If you cannot receive the local station which you have previously stored on one of the preset number buttons or if you do not like the currently broadcasted program on the stored local station, you can receive alternative local station(s) by pressing the same preset number button within five seconds of initial reception. If there are several receivable alternative local stations available in the vicinity, press the same preset number button several times until the desired station is received.

RDS Stations Transmitting the EON Data

The EON data incorporates the AF data of other stations as well. Therefore, the unit can update the AF data of the preset stations and these stations will be tuned in the next time the preset number buttons are pressed.

Receiving Traffic Announcements — *TA Function* *(AEP, German model only)*



Receiving a Traffic Information Station

1 **Select the FM band.**

TUNER

FM I

2 **Press the AF/TA button to get the "TA" indication.**

AF/TA

The search for a traffic information station starts. When an RDS station transmitting the TP data is found, the search stops and the "TP" indication appears on the main display window.

To search another RDS station transmitting traffic announcements
Turn the AMS/SEEK control while the "TA" indication is still on the display window.

If the TA function is activated while the unit is receiving a station which is transmitting the EON data, the "TA", "TP" and "EON" indications will appear on the main display window. In this case, if another station starts broadcasting a traffic announcement, the unit will automatically tune to that station. When the announcement is over, the unit will retune to the previous station.

To cancel the reception of traffic announcements by other stations

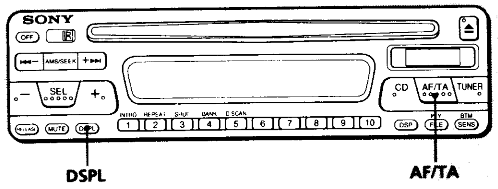
Press the AF/TA button until the "AF, TA-OFF" indication appears on the display window.

Notes
- Do not activate the TA function in an area where there is no traffic information broadcasting service available. If you do so, the unit will keep searching for it and other stations cannot be tuned in.
- If you activate the TA function while the MW or LW (SW) band is tuned in, the FM1 band will be automatically selected and the unit will start searching for a traffic information station.
- When the traffic information station cannot be received, after the "NO TP" indication flashes for approx. four seconds, the unit will begin to search automatically for a station whose traffic information can be received.

"TA" indication
This indicates that the traffic announcement is on the air.

"TP" indication
This indicates that the currently tuned in RDS station offers a traffic information service.

"EON" indication
This indicates that the unit is receiving the station transmitting the EON data.



Standing by for Traffic Announcements while Listening to a CD

Press the AF/TA button to get the "TA" indication during CD play.

AF/TA

The CD play continues while the unit searches for a traffic information station.

When a station is found:
The "TP" indication appears on the main display window.

↓

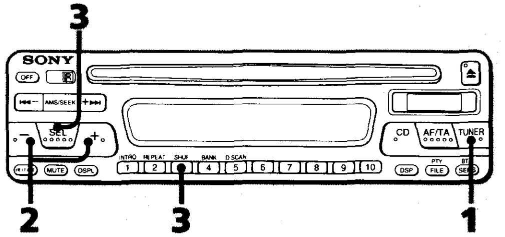
When a traffic announcement starts:
The "TA" indication start flashing. The CD play stop and the traffic announcement is heard.

↓

When the announcement is over:
The CD play resume from where it was left off.

To cancel the stand-by mode
Press the AF/TA button to turn off the "TA" indication.

Changing the display to that of the frequency or station name during CD play
Press the DSPL button a few times. While the frequency or station service name is being displayed, the SEEK, ◀◀/▶▶ buttons on the rotary commander and preset number buttons will function in the same way as they do during a radio reception.



Traffic Announcements are Heard at the Preset Volume Level

When a traffic announcement starts, you can hear it at the preset volume level even if the volume control on the front panel has been turned down. (If you are listening to other sources with a higher volume level, the level will not change.) The preset volume level can be set in the following manner:

1 **Select the FM band.**
2 **Adjust the volume to the desired level.**
3 **Press the preset number button 3 while pressing the SEL button.**
A beep tone will be heard when the setting has been completed.

PTY (Program Type) Data and the Emergency Announcement Reception

It is essential that the built-in micro computer has memorized the necessary RDS data in advance.

Press the PTY button to get the "PTY" indication displayed on the sub display window during FM reception.

If an RDS station transmitting the PTY data is received, the name of the PTY data currently being received will be displayed on the main display window. The PTY data names include "NEWS", "AFFAIRS", "INFO" etc. The name and the "PTY" indication will disappear within five seconds.

To receive another station broadcasting the same or different PTY data

Ⓐ If the "PTY" indication is being displayed:
press the AMS/SEEK button.
Ⓑ If the "PTY" indication is not being displayed:
Press the PTY button to get the "PTY" indication displayed, then press the AMS/SEEK button.

In case of an emergency, or in a situation where there may be danger from a natural disaster in the area, the RDS stations will transmit the PTY data information to warn drivers that they are in danger. The emergency data includes the character display and the interruption signal for automatically turning on the radio. **This data can only be received while the AF or TA function is being activated.**
If the unit receives the emergency data from an RDS station CD play, the "AF" indication on the main display window will start flashing and the CD play will stop. The radio will be automatically turned on to receive the emergency announcement from the station.

Notes
- The PTY function may not be activated immediately after the unit is used for the first time. This is because the unit has not yet memorized some of the RDS data necessary to utilize the PTY function. It is also possible that the stations in your vicinity is not transmitting the PTY data.
- With the PTY function on, the unit receives the available PTY data such as: NEWS, AFFAIRS, INFO, SPORT etc. If a specific data is not available during a search, the "NO DATA" indication will be displayed and if there is no PTY data available at all, the "NONE" indication will be displayed on the main display window.

Connections

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **yellow** and **red** power input leads only after all other leads have been connected.
- Be sure to connect the red power input lead to the positive 12 V power terminal which is energized when the ignition key is in the accessory position.
- **Run all ground wires to a common ground point.**

When the Unit is Used in a Car with No Accessory Position on the Ignition Key

— *POWER SELECT Switch*

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear **if the unit is used in a car with no accessory position on the ignition key.** To avoid this battery wear when using the unit in such a car, **set the POWER SELECT switch located on the bottom of the unit to the OFF position, then press the reset button.** The illumination is reset to stay off while the unit is not being played.

Note
The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the OFF position.

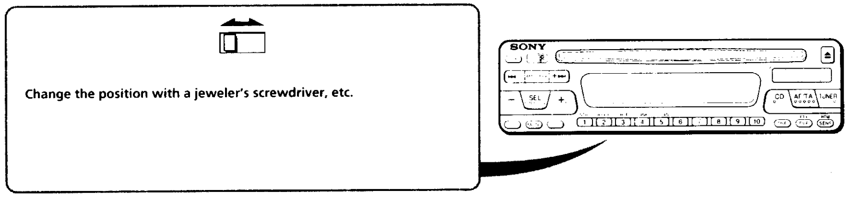
When an FM Diversity Antenna is Used

— *FM DIVERSITY Switch*

The unit can be connected with diversity antennas. If you use this unit with the diversity antennas, set the FM DIVERSITY switch located at the bottom of the unit to the ON position to activate the diversity system.

When you do not use the FM diversity antennas
If you wish to connect a conventional rod antenna, be sure to connect it to the antenna connector of the unit marked "MAIN", and set the FM DIVERSITY switch to the OFF position. Never connect the antenna to the connector marked "SUB", otherwise if the FM DIVERSITY switch is set to the ON position, the radio signals may not be received properly.

Note
The radio reception will be disturbed by noise if the connection of the antennas was not made properly or the FM DIVERSITY switch was not set correctly.

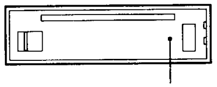


Change the position with a jeweler's screwdriver, etc.

When you change the position of the switch, be sure to press the reset button after the connections are completed.

Reset Button

When the installation and connections are over, be sure to press the reset button with a ball-point pen etc.

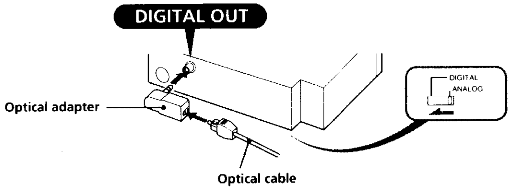

Reset button

When making a digital Connection

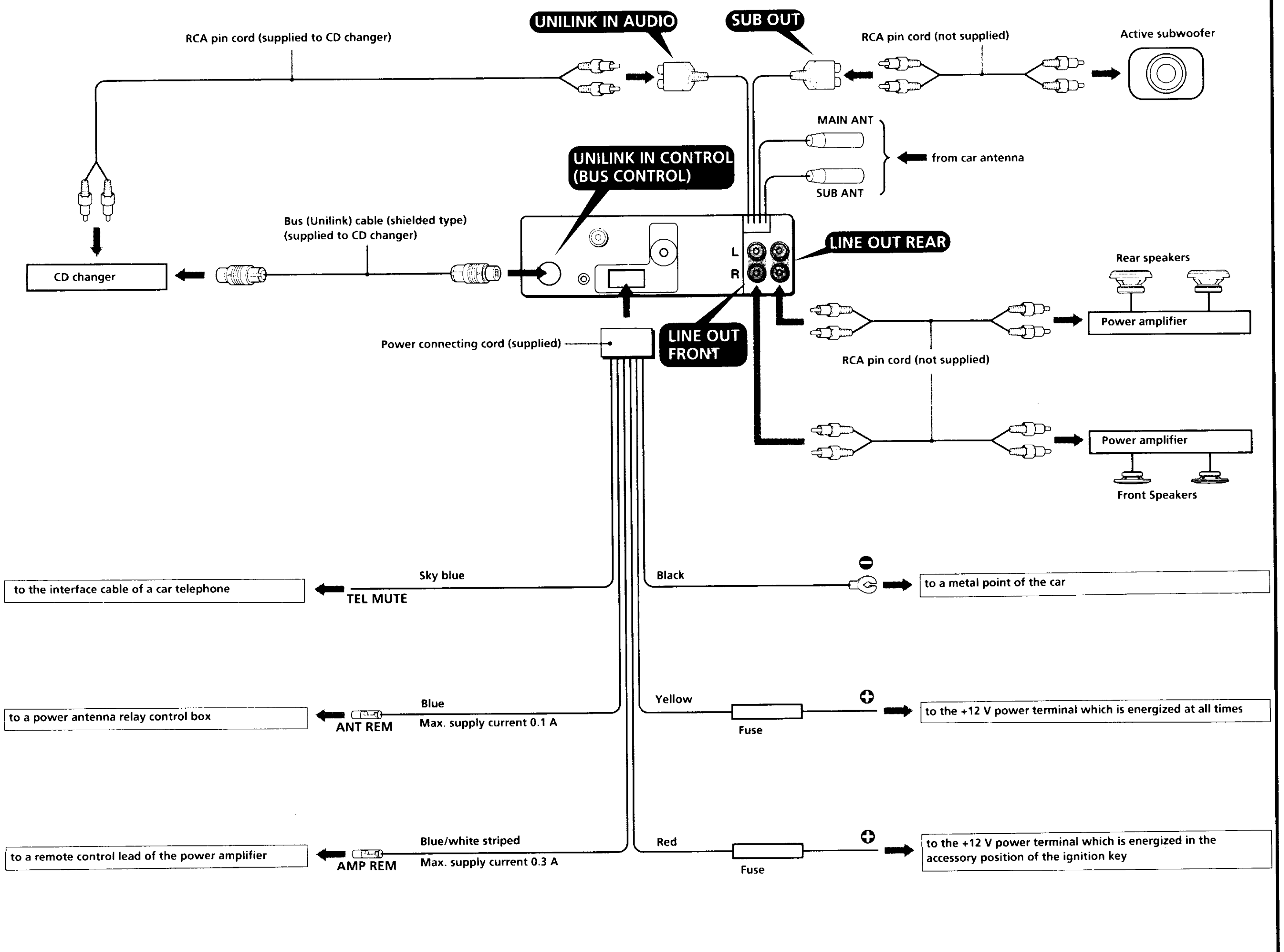
—*DIGITAL/ANALOG SWITCH*

To connect with the XDP-U50D, connect the optical cable (optional) to the optical adapter (optional), and plug the adapter into the special socket on the rear of the unit. Then set the DIGITAL/ANALOG switch to DIGITAL.

Notes:
- The DIGITAL/ANALOG switch is factory-set to ANALOG.
- After changing the switch position, make sure to press one of the RESET buttons.
- If the switch is not correctly set, the unit will work without producing a sound.



Connections


UNILINK IN AUDIO
SUB OUT
RCA pin cord (supplied to CD changer)
RCA pin cord (not supplied)
Active subwoofer
MAIN ANT
SUB ANT
from car antenna
UNILINK IN CONTROL (BUS CONTROL)
Bus (Unilink) cable (shielded type) (supplied to CD changer)
CD changer
L
R
LINE OUT REAR
Rear speakers
Power amplifier
Power connecting cord (supplied)
LINE OUT FRONT
RCA pin cord (not supplied)
Power amplifier
Front Speakers
to the interface cable of a car telephone
Sky blue
TEL MUTE
Black
to a metal point of the car
to a power antenna relay control box
Blue
ANT REM
Max. supply current 0.1 A
Yellow
Fuse
to the +12 V power terminal which is energized at all times
to a remote control lead of the power amplifier
Blue/white striped
AMP REM
Max. supply current 0.3 A
Red
Fuse
to the +12 V power terminal which is energized in the accessory position of the ignition key

Notes on the control leads

- The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the ATA (Automatic Tuner Activation), AF (Alternative Frequency) or the TA (Traffic Announcement) Function.
- A power antenna without relay box cannot be used with this unit.

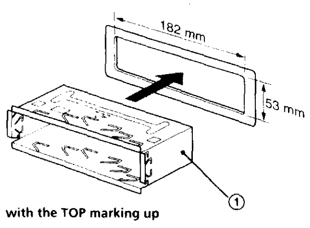
Memory hold connection

When the yellow power input lead is connected, power will always be supplied to the memory circuit even when the ignition key is turned off.

Mounting Example

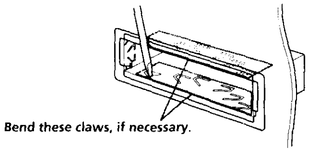
Installation in the dashboard

1



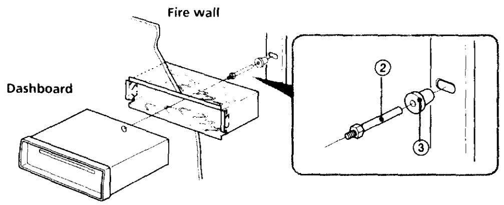
with the TOP marking up

2



Bend these claws, if necessary.

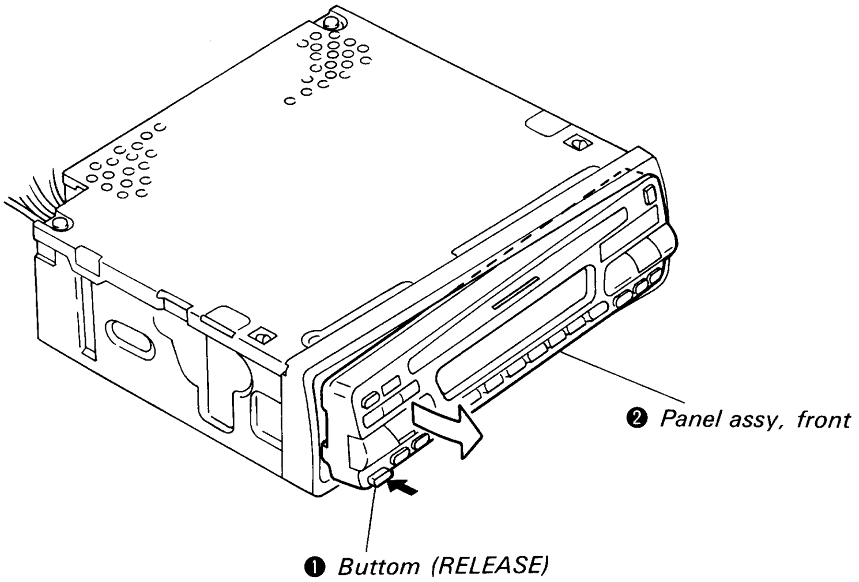
3



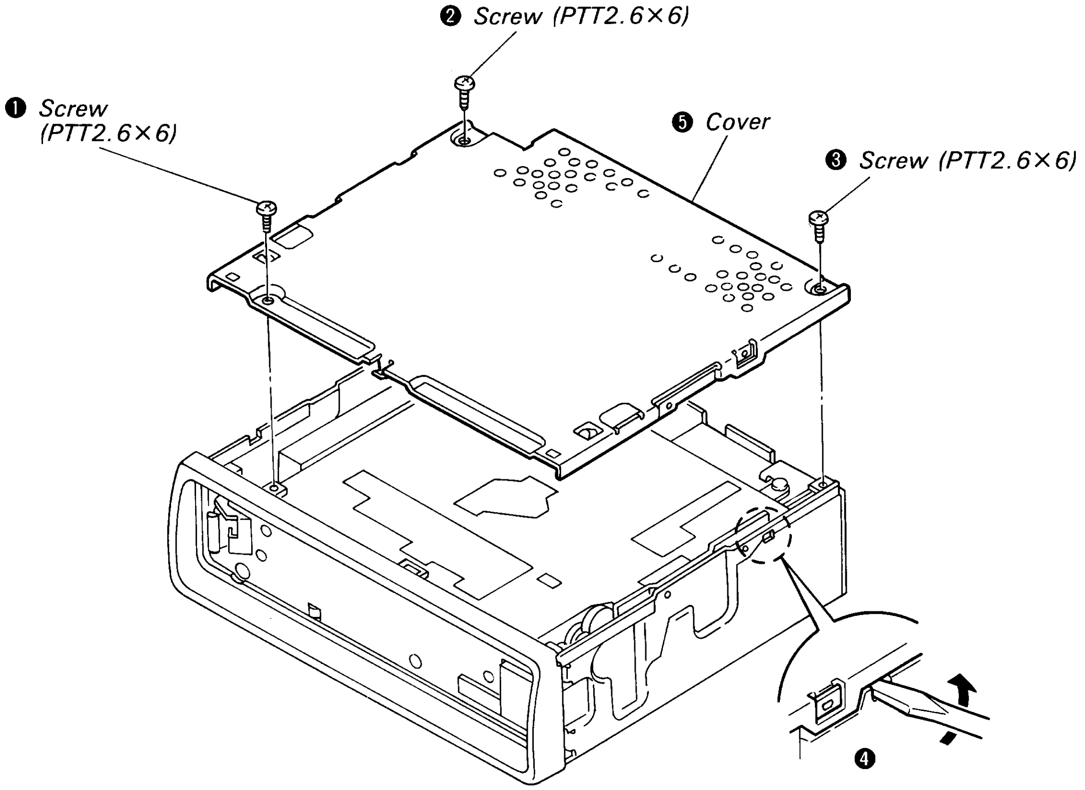
SECTION 2
DISASSEMBLY

NOTE: Follow the disassembly procedure in the numerical order given.

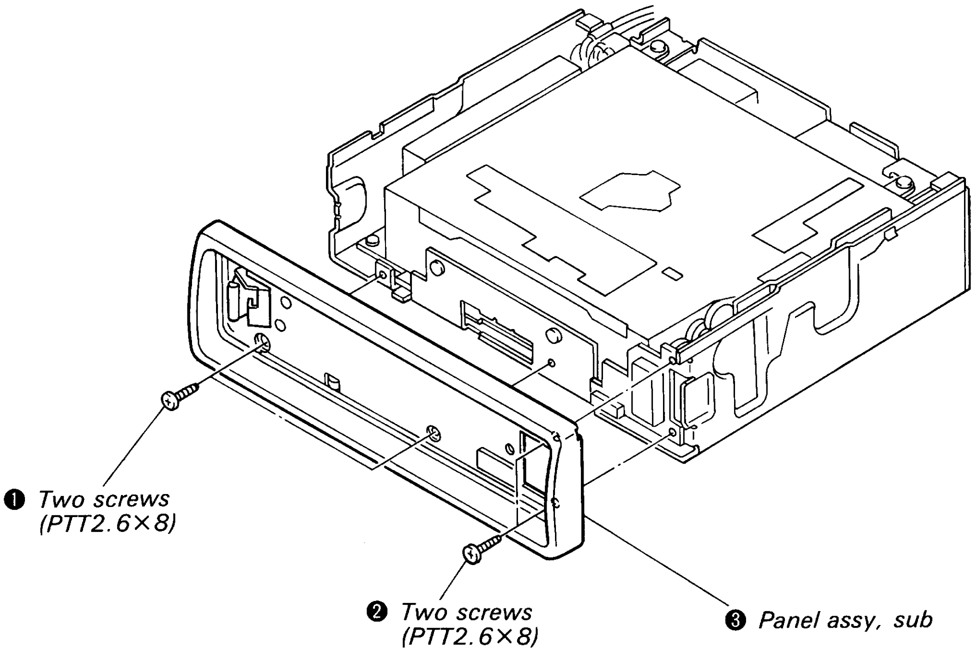
2-1. PANEL ASSY, FRONT



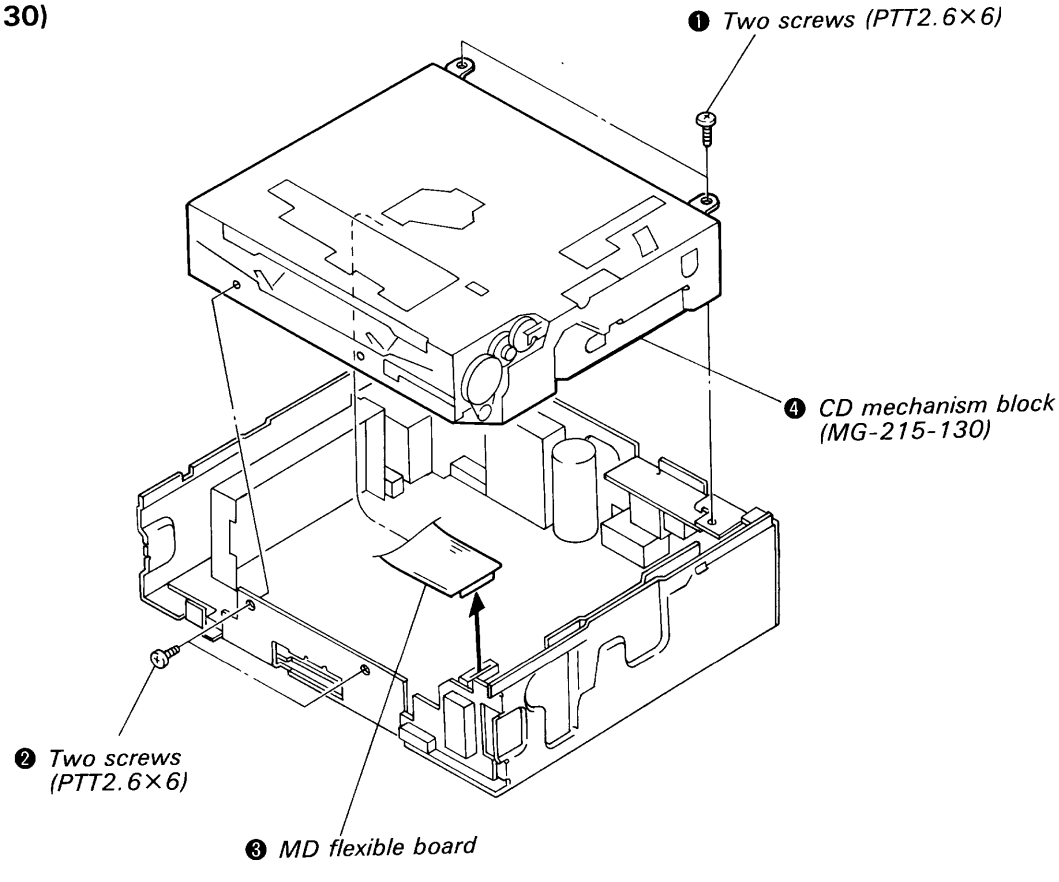
2-2. COVER



2-3. PANEL ASSY, SUB



2-4. CD MECHANISM BLOCK (MG-215-130)



SECTION 3
TEST MODE

Setting:

Method 1

Press keys in order of ④→⑤→① for 2sec. under OFF condition.

Method 2

Pin㉕ of IC501 (SYSTEM CONTROL) →Connected to GND →RESET button (SW901)

Note: While the TEST MODE is set, the following will be displayed on the LCD.
Bit display "SHUF1"

Releasing:

Press OFF key, or press RESET button (Open pin㉕ of IC501).

LCD display test

All segments of the display are lit up at the beginning of test mode.

Electronic volume test

+ key :

→ −20dB → −10dB → 0dB ─┘

− key : normal operation

SEL key :

→ BASS max → BASS min → TREBLE max
└ All center ← LOUD on ← TREBLE min ←┘

MUTE key :

→ BALANCE R → BALANCE L → FADER rear
└ All center ← FADAR front ←┘

CD SECTION

Audio Measurement Mode

When CD is played, the AUDIO MEASUREMENT MODE turns on.

When "YEDS-18" is played in the measuring mode, only the following Track No. will be played. (BANK function)

Each time the 4 key is pressed, the measuring mode turns on/off cyclically.

Note: AUDIO MEASUREMENT MODE PLAY Track No.
No. 2, 3, 5, 6, 7, 8, 10, 12, 13, 17, 19
(These have been set assuming that YEDS-18 will be used.)
While the audio measurement mode is set, the following will be displayed on the LCD.
Bit display "BANK"

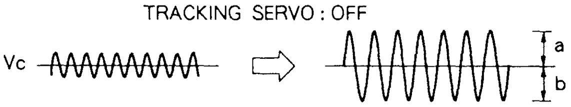
When YEDS-18 is used, the recording signals of the above TRKs are as follows.

TON	CONTENTS	EMPHASIS	PURROSE
2	1kHz Sine Wave 0dB L & R	OFF	Reference
3	20kHz Sine Wave 0dB L & R	OFF	Frequency
5	10kHz Sine Wave 0dB L & R	OFF	Frequency
6	20kHz sine Wave 0dB L & R	OFF	Modulation Noise
7	Infinity Zero −∞ dB L & R	OFF	S/N
8	1kHz Sine Wave 0dB L	OFF	Channel Separation
10	1kHz Sine Wave 0dB R		
12	5kHz Sine Wave −4.53dB L & R	ON	De emphasis
13	16kHz Sine Wave −9.04dB L & R		
17	1kHz Sine Wave −60dB L & R	OFF	Dynamic Range

Adjusting and Checking Functions

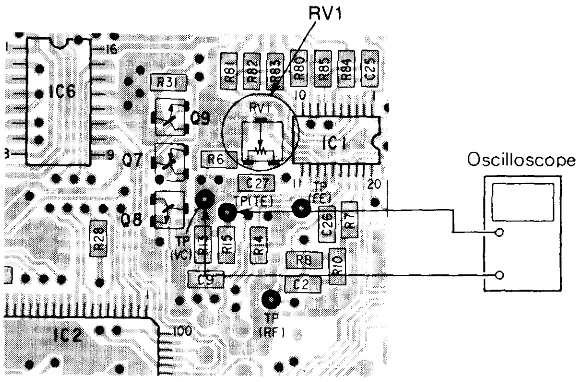
a) TRACKING OFFSET adjustment

Each time the INTRO key is pressed while the CD is played, the TRACKING SERVO turns on/off. The bit display "INTRO" on the LCD will be lit while the TRACKING SERVO is off.



Adjustment Location and Measurement point:

【MD BOARD】 (COMPONENT SIDE)



Procedure:

Adjust RV1 so that the peak values of waveforms a and b become equal.

b) Focus search retry mode

Each time the REP key is pressed while the CD is played, the FOCUS SEARCH RETRY MODE turns on/off.

When the FOCUS does not turn on in the FOCUS SEARCH RETRY MODE, the FOCUS search is repeated. Once the FOCUS turns on, the unit sets into the PLAY condition.

During the FOCUS SEARCH RETRY MODE, the "REP1" bit display on the LCD will be lit.

Note: This mode is for checking the unit when FOCUS cannot be set.

CD Error Display

During CD PLAY in the TEST MODE, the following ERROR displays will be shown when CD errors occur.

"E- n1 n2"

n1 to n2 are determined by ERROR symptoms as shown below.

n1	n2
1 : SERVO ERROR	1 : FOCUS ERROR 2 : GFS ERROR 3 : SLED MAX TIME OVER 4 : SLED OVERRUN 5 : TOC READ ERROR
3 : LOADING /EJECT ERROR	1 : MAX TIME OVER (When sensor is passed during loading.) 2 : Loading of only 8cm CD, adaptor, etc. 3 : MAX TIME OVER (Until chucking ends during loading.) 4 : MAX TIME OVER (Until EJECT ends during ejecting.)
4 : TRACK JUMP	1 : FOCUS DOWN 2 : TRACK JUMP 3 : HANG UP
D : TEMP (HOT)	0
F : MD GIVE UP	7 : EJT

TUNER SECTION

When the tuner is turned on in the TEST MODE, all bands will first be set to f.center.

SEEK STOP TEST Function

a) When the SEEK+ key is pressed, the unit is set to a frequency −10 steps from the f.center and automatically seeks up to the f.center.

- If the unit seek stops at the f.center:
  The unit sets into the f.center reception state. Preset No. "1" will be displayed.
- If the unit seeks up to the f.center and cannot seek stop:
  It returns to the −10 step frequency and seeks up again.
- If the unit seek stops before the f.center:
  The unit receives that frequency. Preset No. "3" will be displayed.

b) When the SEEK− key is pressed, the unit is set to a frequency +10 steps from the f.center and automatically seeks down to the f.center.

Hereafter the same as the SEEK+ key.

c) When the SEEK+ key is pressed for more than two seconds, the unit is set to a frequency −10 steps from the f.maximum and seeks up.

Hereater the same as a) except that f.center is replaced by f.maximum.

d) Press the SEEK− key for more than two seconds to carry out normal MANUAL search down operations.

BAND SELECT

During TEST MODE, only the single band can be selected.

AGC CUT Function

In the AM ON condition, this function activates the $\overline{\text{SEEK}}$ port (IC551) and cuts AGC.

In the AGC CUT condition, the following displays on the LCD will light up.

Bit display "CHANGER"

When the 10 key is pressed for more than two seconds, AGC CUT turns on/off cyclically.

(The BTM function is unavailable.)

Note: Set the AGC CUT condition when adjusting the AM SEEK STOP sensitivity.
If the band changes from FM to AM, be sure to turn on the AGC CUT.

SD Signal Display
(For adjusting SEEK STOP LEVEL)

If the SD signal becomes high while a certain frequency is being received, after BAND displays such as "FM", "AM", etc. are shown, the following displays will light up.

"III" display

When the SD signal is low, nothing will be shown after the BAND is displayed.

RDS Signal Level Display Function
(For adjusting FM S meter)

When the $\boxed{10}$ key is pressed, the level of the S meter voltage of the A/D conversion input will be displayed. (Displayed at frequency display)

* Input FM f.center 35 dB μ no-modulation at SG, and adjust (RV551) the RDS signal level displayed to 11.8.

Press $\boxed{1}$ – $\boxed{10}$, etc. to return the frequency display.

DESTINATION	BAND	f.minimum	f.center	f.maximum	step (SEEK)	step (MANUAL)
US	FM	87.5MHz	97.9MHz	107.9MHz	200kHz	200kHz
	AM	530kHz	1000kHz	1710kHz	10kHz	10kHz
AEP	FM	87.5MHz	98.0MHz	108.0MHz	50kHz	50kHz
	MW	531kHz	999kHz	1602kHz	9kHz	9kHz
	LW	153kHz	216kHz	281kHz	9kHz	1kHz
German	FM	87.5MHz	98.0MHz	108.0MHz	50kHz	50kHz
	MW	531kHz	999kHz	1602kHz	9kHz	9kHz
	SW	5950kHz	6080kHz	6200kHz	5kHz	1kHz

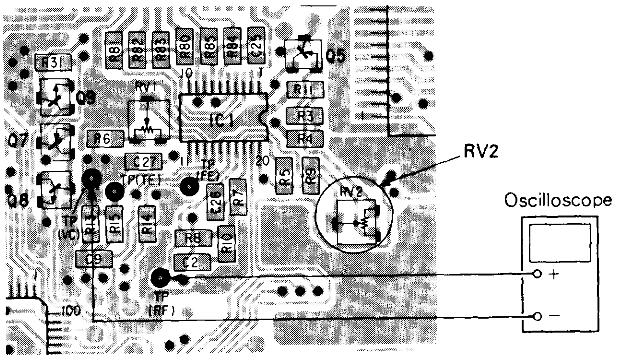
SECTION 4
ELECTRICAL ADJUSTMENTS

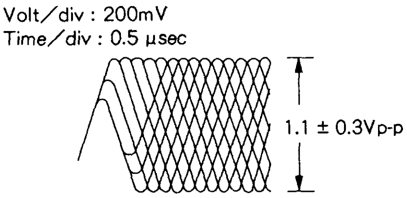
CD SECTION

Focus Offset Adjustment

Adjustment Location and Measurement point:

[MD BOARD] (COMPONENT SIDE)





Procedure:

1. Connect the oscilloscope to test point RF on the MD board.
2. Load a disc and set mode to PLAY.
3. Adjust RV2 so that the waveform on the oscilloscope (eye pattern) is maximum with good shape. "Well-shaped eye pattern" means that the mark "◇" is clearly distinguished at the center of the waveform.

Tracking Offset Adjustment

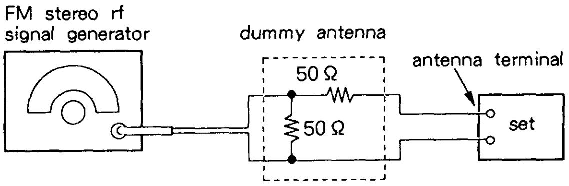
Refer to the "TEST MODE CD SECTION".

TUNER SECTION

FM Seek Stop Level Adjustment (FM SD Adjustment)

Setting:

Band : FM
Frequency : 97.9MHz (US Model)
98MHz (AEP, German Model)

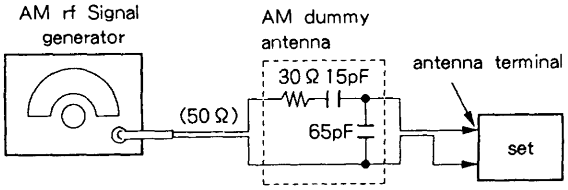


Carrier frequency : 97.9MHz (US Model)
98MHz (AEP, German Model)
Modulation : 1kHz, 75kHz
Output level : 22dB (12.6 µV)

AM Seek Stop Level Adjustment (AM SD Adjustment)

Setting:

Band : AM
Frequency : 1000kHz (US Model)
999kHz (AEP, German Model)



Carrier frequency : 1000kHz (US Model)
999kHz (AEP, German Model)
Modulation : 400Hz, 30 %
Output level : 35dB (40 µV)

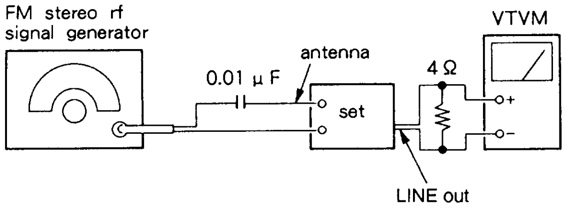
Procedure:

1. Set the "SD Signal Display" MODE of the TEST MODE.
2. Adjust RV3 (FM), RV1 (AM) of the TUNER UNIT, and erase the SD display "O" once.
3. Adjust RV3 (FM), RV1 (AM) so that a SD display lights up again.
4. Check with the "SEEK STOP TEST" function of the TEST MODE.

FM Stereo Separation Adjustment

Setting:

Band : FM Stereo
Frequency : 97.9MHz (US Model)
98MHz (AEP, German Model)



Carrier frequency : 97.9MHz (US Model)
98MHz (AEP, German Model)
Modulation : Main channel : 1kHz, 33.75kHz deviation (45 %)
Pilot signal : 18kHz, 7.5kHz deviation (10 %)
Subchannel : 1kHz, 33.75kHz deviation (45 %)
Output level : 1mV (More than 35dB)

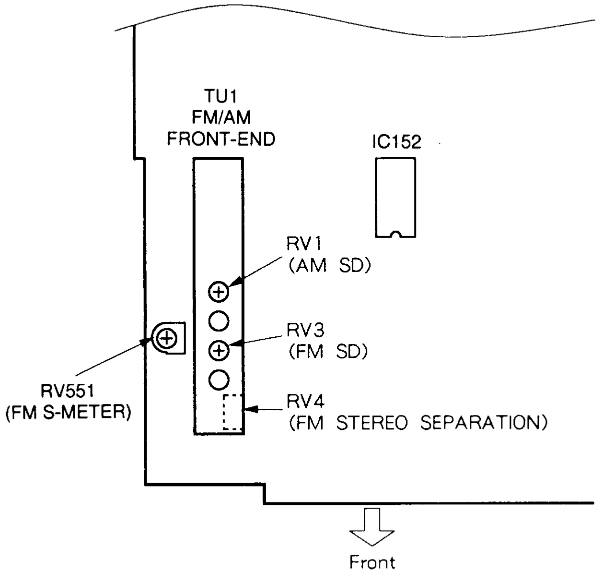
Procedure:

FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	ⓐ
R-CH	L-CH	ⓑ Adjust RV4 for minimum reading.
R-CH	R-CH	ⓒ
L-CH	R-CH	ⓓ Adjust RV4 for minimum reading.

Note: The separation values in the two channels should be identical.
ⓐ − ⓑ = ⓒ − ⓓ

Adjustment Location:

[MAIN BOARD] (COMPONENT SIDE)



SECTION 5
DIAGRAMS

5-1. IC PIN FUNCTION

•IC10 MECHANISM CONTROL MICROPROCESSOR (μPD75517GF-260-3B9)

Pin No.	Pin Name	I/O	Function
1	TEMP. H	I	Temperature detection input
2	VREF	I	Reference voltage input
3, 4	VDD	—	Power supply terminal (+5V)
5	SQCK	O	Read data sub code clock output to the digital signal processor (IC2)
6	DIG ON	O	Not used (open)
7, 8	N. C.	—	No connection
9	LM+	O	Loading motor drive signal output ＊1
10	LM−	O	Loading motor drive signal output ＊1
11	AUDIO SW	O	Not used (open)
12	MUTE	O	Not used (open)
13—16	PH4—PH1	I	Disc sensor detection input
17	DIG OUT SEL	I	Valid/invalid selection of the digital out "H": Valid
18	T DATA	O	Data output to IC401 (YSD221)
19	T CLK	O	Clock output to IC401 (YSD221)
20	T LATCH	O	Latch output to IC401 (YSD221)
21	LINK OFF	O	Not used (open)
22	XQOK	O	Not used (open)
23	XRDE	O	Not used (open)
24	XWRE	O	Not used (open)
25	WDSL	O	Not used (open)
26	CHM1	O	Not used (open)
27	CHM0	O	Not used (open)
28	DTSL	O	Not used (open)
29—32	AM16—AM19	I	Not used (open)
33	VSS	—	Ground terminal
34	$\overline{\text{DISC SET}}$	I	Detects the completion of the disc chucking operation.
35	XEMP	I	Not used (open)
36	XWIH	I	Not used (open)
37	N. C.	I	No connection
38	EMPH	O	Emphasis output to the digital filter (IC402)
39	N. C.	—	No connection
40	8CM	I	Valid/invalid selection of the 8cm disc "H": Valid of the 8cm disc
41	SCLK	O	Read data clock signal output to the digital signal processor (IC2)
42	XDAT	O	Data signal output to the digital signal processor (IC2)
43	XLAT	O	Data latch pulse signal output to the digital signal processor (IC2)
44	XCLK	O	Data clock signal output to the digital signal processor (IC2)
45	REQ	O	Not used (open)
46	M/$\overline{\text{S}}$ SEL	I	Master/slave selection input (Fixed at "H")
47	IN SW	I	Disc detection input When the disc is loaded: "L"
48	$\overline{\text{BUS ON}}$	I	BUS interface ON/OFF selection input from the master control (IC501)
49	SCOR	I	Sub code sync input from the digital signal processor (IC2)
50	DATA IN	I	Data input from the unilink interface (IC520)
51	DATA OUT	O	Data output to the unilink interface (IC520)
52	CLK IN	I	Serial clock input from the master control (IC501)
53	BU CHECK	I	Backup power supply detection input "H": Backup ON
54	GND	—	Ground terminal

Pin No.	Pin Name	I/O	Function
55	XT1	I	Not used (connected to ground)
56	XT2	O	Not used (open)
57	GND	—	Ground terminal
58	X1	I	Clock input (6MHz)
59	X2	O	Clock output (6MHz)
60	RESET	I	Reset signal input
61	CD ON	O	Servo circuit power supply control output "L": ON
62	MD ON	O	MD circuit power supply control output "L": ON
63	AMUTE	O	Audio mute signal output
64	$\overline{\text{APC}}$	O	Laser diode ON/OFF selection signal output "L": ON
65	FOK	I	FOK monitor input from the digital signal processor (IC2)
66	CD CLK	—	Not used (connected to ㊹ pin)
67	CD LATCH	—	Not used (connected to ㊸ pin)
68	CD DATA	—	Not used (connected to ㊷ pin)
69	SCLK	—	Not used (connected to ㊶ pin)
70, 71	N. C.	—	No connection
72	CD RST	O	Reset signal output for the CD section
73	VSS	—	Ground terminal
74	SENS	I	Sense signal input from the digital signal processor (IC2)
75	TEST	I	Test input (Fixed at "L")
76	SUB Q	I	Sub code data input from the digital signal processor (IC2)
77	GFS	I	GFS monitor input from the digital signal processor (IC2)
78	ESP ON/OFF	I	Valid/invalid selection of the ESP "H": Valid
79	N. C.	I	Connected to ground
80	TEMP. L	I	Temperature detection input

＊1 Loading motor control

	STOP	LOADING	EJECT	BRAKE
LM+ ⑨ pin	"L"	"H"	"L"	"H"
LM− ⑩ pin	"L"	"L"	"H"	"H"

•IC501 MASTER CONTROL MICROPROCESSOR (μPD75518GF-185-3B9)

Pin No.	Pin Name	I/O	Function
1	KEY IN 0	I	Key input (A/D conversion input)
2	VREF	O	Reference voltage output terminal of A/D conversion
3, 4	VCC	—	Power supply terminal (+5V)
5	KEY ACTIVE	O	VREF control output terminal of A/D conversion
6	P ON	O	Power ON/OFF control output "H": Power ON
7	ILL ON	O	Illumination ON/OFF control output "H": Illumination ON
8	COLOR	O	Color selection output of illumination "H": Green, "L": Amber
9	MUTE	O	Audio mute output "H": Mute ON
10	AUX MUTE	O	Aux mute output Not used (open)
11, 12	N. C.	O	No connection
13	SUB CLK	O	Data clock output to the electrical sub volume (IC152)
14	SUB DATA	O	Serial data output to the electrical sub volume (IC152)
15	SUB CE	O	Chip select output to the electrical sub volume (IC152)
16	LCD INH	O	Inhibit control output to the LCD driver (IC701)
17	N. C.	O	Not used (connected to ground)
18	LCD DATA	O	Serial data output to the LCD driver (IC701)
19	LCD CLK	O	Data clock output to the LCD driver (IC701)
20	LCD CE	O	Chip select output to the LCD driver (IC701)
21	VOL CE	O	Chip select output to the electrical main volume (IC151)
22	PLL CE	O	Chip select output to the PLL Not used (open)
23	VOL CLK	O	Data clock output to the electrical main volume (IC151)
24	VOL DATA	O	Serial data output to the electrical main volume (IC151)
25	TEST	I	Test mode terminal "L": Test mode Normally: "H"
26—28	N. C.	I	Not used (connected to ground)
29	NOSE SW	I	Detects the removal of the attaching and removing type operation block Removing: "L"
30	DIGITAL SEL	I	Digital out ON/OFF selection input Digital out ON: "H"
31, 32	N. C.	I	Not used (connected to ground)
33	VSS	—	Ground terminal
34—37	N. C.	I	Not used (connected to ground)
38, 39	N. C.	I	No connection
40	SUB VOL SEL	I	Valid/invalid selection of the electrical sub volume "L": Valid (Fixed at "L")
41	N. C.	I	Not used (connected to ground)
42	SYS RESET	O	System reset output
43	BUS ON	O	BUS interface ON/OFF selection output to the unilink interface (IC520) and tuner control (IC551)
44	CLK OUT	O	Serial clock output to the unilink interface (IC520), tuner controller (IC551) and the MD block
45	BEEP	O	Buzzr drive output
46	ACC CHECK	I	Accessory power supply detction input "L": Accessory ON
47	KEY ACK	I	Front panel keys and joystic detection
48	N. C.	I	Not used (connected to ground)
49	SIRCS	I	Sircs signal input from the remote control receiver (IC702)
50	DATA IN	I	Data input from the unilink interface (IC520)
51	DATA OUT	O	Data output to the unilink interface (IC520)
52	S CLK IN	I	Serial clock input from ㊹ pin of this IC
53	BU CHECK	I	Backup power supply detection input "H": Backup ON
54	VSS	—	Ground terminal
55	XT1	—	Not used (connected to ground)

Pin No.	Pin Name	I/O	Function
56	XT2	—	Not used (open)
57	VSS	—	Ground terminal
58	X1	—	The system clock (4.19MHz) for master control IC
59	X2	—	The system clock (4.19MHz) for master control IC
60	$\overline{\text{RESET}}$	I	Reset signal input "L": Reset
61	ANT REM	O	When tuner active mode: "H" Not used (open)
62 — 64	N. C.	O	No connection
65	N. C.	I	Not used (connected to ground)
66	$\overline{\text{TEL MUTE}}$	I	Telephone mute input
67	$\overline{\text{CAUTION SEL}}$	I	Initial setting for caution alarm function
68	N. C.	I	Not used (connected to ground)
69	MODE 2	O	Not used (open)
70	MODE 1	O	Not used (open)
71	AUDIO SEL 1	O	Not used (open)
72	AUDIO SEL 0	O	Not used (open)
73	AGND	—	Analog ground terminal
74	EQ ON	I	Valid/invalid selection of the equalizer "H": Invalid (Fixed at "H")
75	P SEL SW	I	Power selection ON/OFF input "H": ON, "L": OFF
76	JST IN 2	I	Joystick input
77	JST IN 1	I	Joystick input
78	$\overline{\text{DSP}}$	I	Valid/invalid selection input of the digital signal processor "L": Valid (Fixed at "L")
79	$\overline{\text{TV}}$	I	Valid/invalid selection of the TV "L": Valid (Fixed at "H")
80	KEY IN 1	I	Key input (A/D conversion input)

•IC551 TUNER CONTROL MICROPROCESSOR (MN1882417SNU2) (AEP, German models only)

Pin No.	Pin Name	I/O	Function
1—6	A5—A0	O	Address control output to the static RAM (IC560)
7	VDD	—	Power supply terminal (+5V)
8	X1	I	Clock input (8MHz)
9	X2	O	Clock output (8MHz)
10	GND	—	Ground terminal
11	XTI	I	Sub clock input Not used (open)
12	XTO	O	Sub clock output Not used (open)
13	EX2	I	Connected to ground
14	$\overline{\text{RESET}}$	I	Reset signal input
15	RDS CLK	I	RDS CLK signal input from the RDS decoder (IC304)
16	BU CHECK	I	Backup power supply detection input "H": Backup ON
17	$\overline{\text{BUS ON}}$	I	BUS interface ON/OFF selection input from the master control (IC501)
18—25	D7—D0	I/O	Data input and output to the static RAM (IC560)
26	RE	O	Read enable output to the static RAM (IC560)
27	WE	O	Write enable output to the static RAM (IC560)
28	TERM	O	Not used (open)
29	R/W	O	Not used (open)
30	RDS DATA	I	RDS DATA signal input from the RDS decorder (IC304)
31	DEV SENS	I	FM audio level detection input
32	AM ST IN	I	Not used (Fixed at "H")
33—35	S2—S0	—	Not used (open)
36, 37	—	I	Not used (connected to ground)
38	PLL DI	I	Data input from the PLL (IC302)
39	PLL DO	O	Data output to the PLL (IC302)
40	PLL CLK	O	Clock output to the PLL (IC302)
41	PLL CE	O	Chip enable output to the PLL (IC302)
42	REQUEST	O	BUS interface request output Terminal for requesting communication Requests at "H"
43	LINK OFF	O	BUS interface link ON/OFF selection output "H": Link OFF
44	SCK	I	Serial clock input from the master control (IC501)
45	SI	I	Data input from the unilink interface (IC520)
46	SO	O	Data output to the unilink interface (IC520)
47	VDD	—	Power supply terminal (+5V)
48	AVDD	—	Power supply terminal (+5V)
49	VREF+	I	Reference voltage input terminal of A/D conversion
50, 51	—	—	Not used (Fixed at "L")
52	SRAM RST	I	Reset signal input Not used (Fixed at "H")
53	MUTE SEL	I	Fixed at "L"
54	MS 1	I	Model selection input terminal (Fixed at "L")
55	MS 2	I	Model selection input terminal (Fixed at "L")
56	AM VSM	I	AM S meter voltage detection input
57	FM VSM	I	FM S meter voltage detection input Uses the A/D conversion functions during BTM and RDS
58	VREF−	—	Reference voltage ground terminal
59	AVSS	—	Ground terminal
60	VSS	—	Ground terminal
61	TUNER ON	O	Tuner ON/OFF selection output to the regulator (IC601) "H": Tuner ON
62	LO/$\overline{\text{DX}}$	O	Local/DX selection output Not used

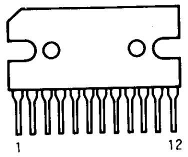
Pin No.	Pin Name	I/O	Function
63	$\overline{\text{SEEK OUT}}$	O	Seek output Output level "L" when change the frequency
64	AM ON	O	Not used (open)
65	FM ON	O	FM ON/OFF selection output to the regulator (IC601)
66	MUTE	O	Muting control signal output
67	AF SEEK	O	AF seek control output.
68	SRAM	O	Control signal output to the static RAM (IC560)
69	A15	O	Not used (open)
70	FM ST IN	I	Stereo indicator control input
71	SD	I	SD input
72, 73	A14, A13	O	Not used (open)
74	CE	O	Chip enable output to the static RAM (IC560)
75	A11	O	Not used (open)
76—80	A10—A6	O	Address control output to the static RAM (IC560)

•IC551 TUNER CONTROL MICROPROCESSOR (MN1882417SZP) (US model only)

Pin No.	Pin Name	I/O	Function
1—6	A5—A0	O	Not used (open)
7	VDD	—	Power supply terminal (+5V)
8	X1	I	Clock input (8MHz)
9	X2	O	Clock output (8MHz)
10	GND	—	Ground terminal
11	XTI	I	Sub clock input Not used (open)
12	XTO	O	Sub clock output Not used (open)
13	EX2	I	Connected to ground
14	$\overline{\text{RESET}}$	I	Reset signal input
15	RDS CLK	I	Not used (Fixed at "L")
16	BU CHECK	I	Backup power supply detection input "H": Backup ON
17	$\overline{\text{BUS ON}}$	I	BUS interface ON/OFF selection input from the master control (IC501)
18—25	D7—D0	I/O	Not used (open)
26	RE	O	Not used (open)
27	WE	O	Not used (open)
28	TERM	O	Not used (open)
29	R/W	O	Not used (open)
30	RDS DATA	I	Not used (Fixed at "L")
31	DEV SENS	I	FM audio level detection input
32	AM ST IN	I	Not used (Fixed at "H")
33—35	S2—S0	—	Not used (open)
36, 37	—	I	Not used (connected to ground)
38	PLL DI	I	Data input from the PLL (IC302)
39	PLL DO	O	Data output to the PLL (IC302)
40	PLL CLK	O	Clock output to the PLL (IC302)
41	PLL CE	O	Chip enable output to the PLL (IC302)
42	REQUEST	O	BUS interface request output Terminal for requesting communication Requests at "H"
43	LINK OFF	O	BUS interface link ON/OFF selection output "H": Link OFF
44	SCK	I	Serial clock input from the master control (IC501)
45	SI	I	Data input from the unilink interface (IC520)
46	SO	O	Data output to the unilink interface (IC520)
47	VDD	—	Power supply terminal (+5V)
48	AVDD	—	Power supply terminal (+5V)
49	VREF+	I	Reference voltage input terminal of A/D conversion
50, 51	—	—	Not used (Fixed at "L")
52	SRAM RST	I	Reset signal input
53	MUTE SEL	I	Fixed at "L"
54	MS 1	I	Model selection input terminal (Fixed at "H")
55	MS 2	I	Model selection input terminal (Fixed at "L")
56	AM VSM	I	AM S meter voltage detection input
57	FM VSM	I	FM S meter voltage detection input Uses the A/D conversion functions during BTM
58	VREF−	—	Reference voltage ground terminal
59	AVSS	—	Ground terminal
60	VSS	—	Ground terminal
61	TUNER ON	O	Tuner ON/OFF selection output to the regulator (IC601) "H": Tuner ON
62	LO/$\overline{\text{DX}}$	O	Local/DX selection output Not used
63	$\overline{\text{SEEK OUT}}$	O	Seek output Output level "L" when change the frequency
64	AM ON	O	Not used (open)
65	FM ON	O	FM ON/OFF selection output to the regulator (IC601)
66	MUTE	O	Muting control signal output
67	AF SEEK	O	AF seek control output
68	SRAM	O	Not used (open)
69	A15	O	Not used (open)
70	FM ST IN	I	Stereo indicator control input
71	SD	I	SD input
72, 73	A14, A13	O	Not used (open)
74	CE	O	Not used (open)
75	A11	O	Not used (open)
76—80	A10—A6	O	Not used (open)

5-2. SEMICONDUCTOR LEAD LAYOUTS

BA3910B-V3



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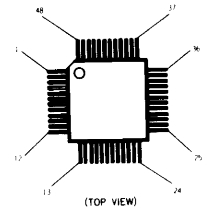

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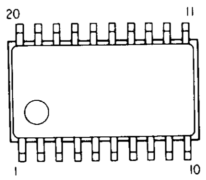

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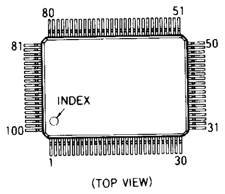

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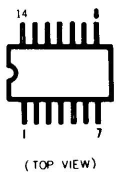

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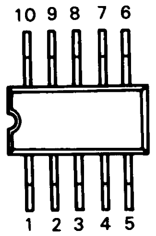

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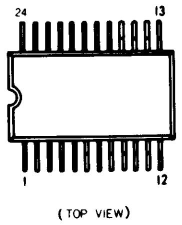

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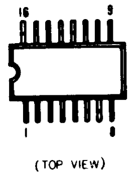

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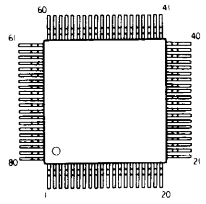

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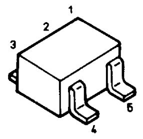

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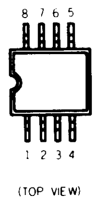

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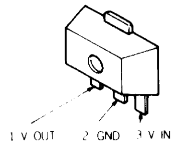

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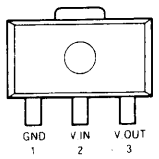

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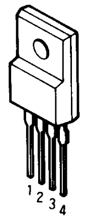
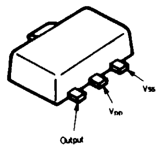


1 : V IN 3 : GND
2 : V OUT 4 : ON/OFF CONTROL

S-8054HN-CB



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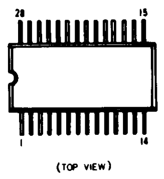

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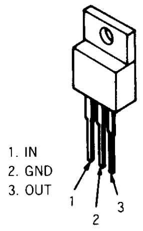

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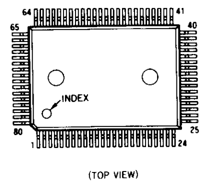

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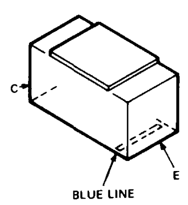

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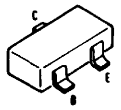

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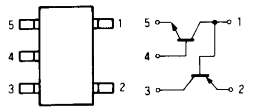

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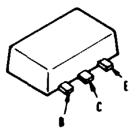

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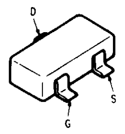

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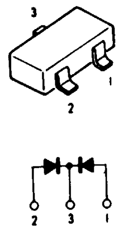
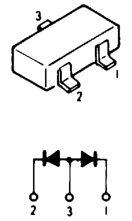
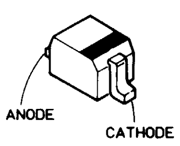


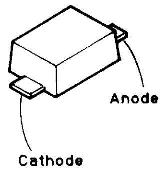
DAP202K
MA721WA-TX



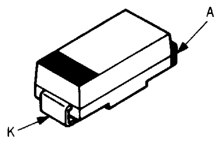
DTZ16C
DTZ5.1B-TT11
MA110
1SS318



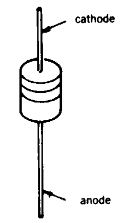
MA8039-L-TX
MA8051-H
MA8068-H
MA8091-H



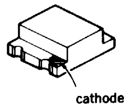
NSQ03A04



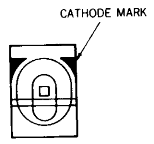
RD6.2ES-TPB1
RD6.8ES-TPB1



CL-155Y/PG-D-T-YL



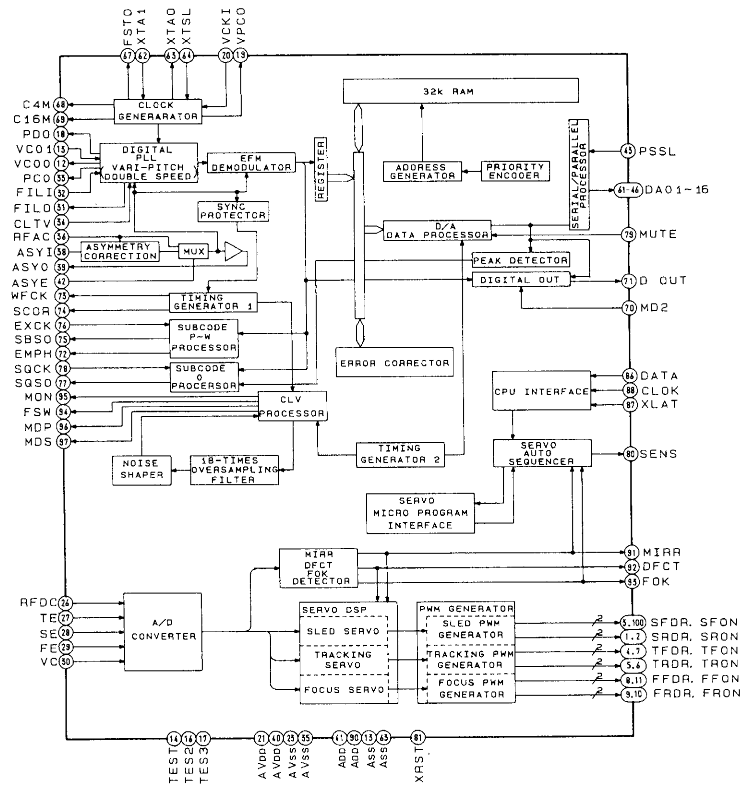
CL-200IR-X-TU



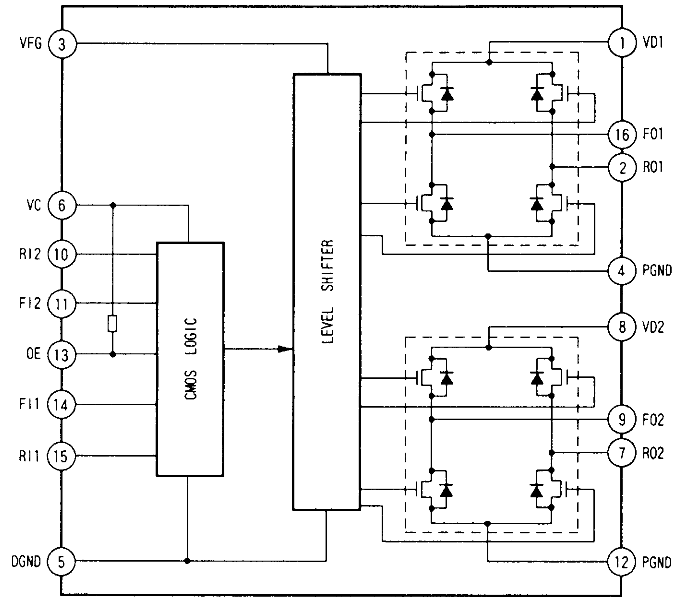
5-3. BLOCK DIAGRAM

● IC Block Diagrams —CD Section—

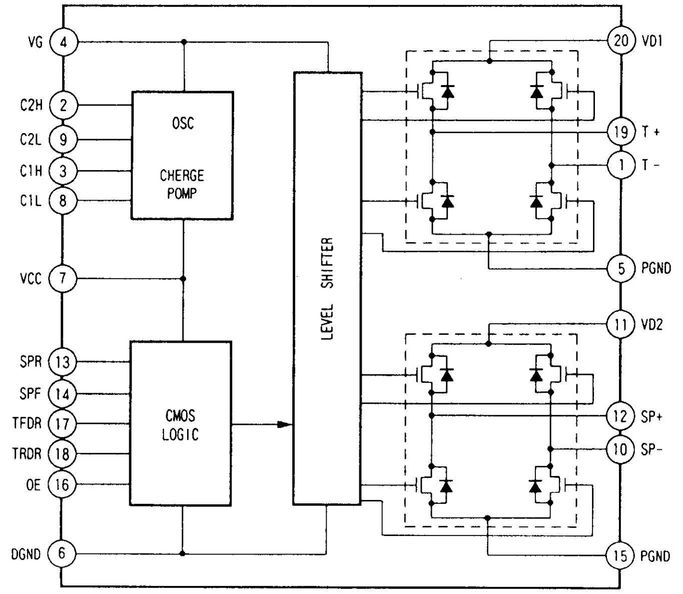
IC2 CXD2515Q



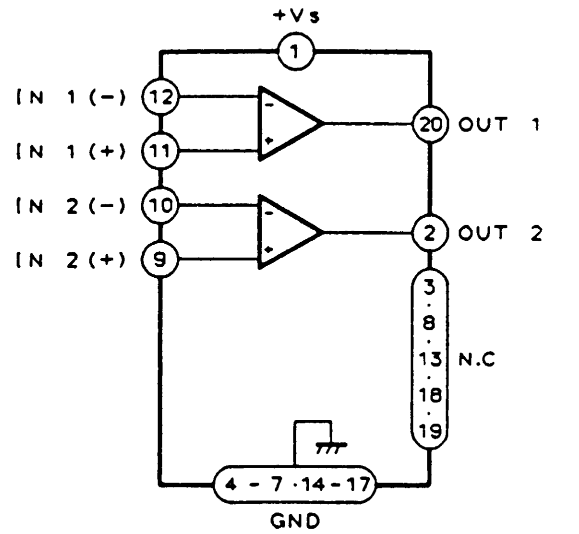
IC6 MPC1732MR2



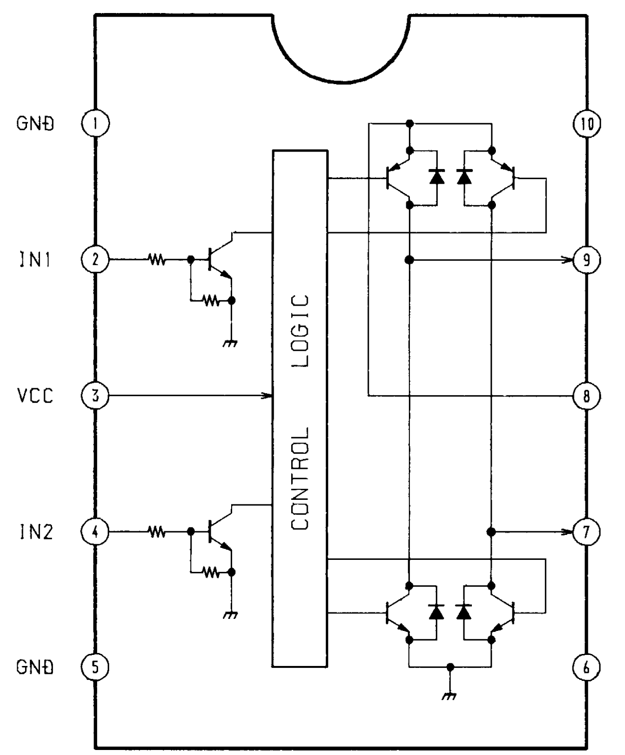
IC5 MPC1730MR2



IC8 L2726



IC9 LB1638M



● Semiconductor Location

Ref. No.	Location
D801	A - 14
D802	B - 9
D804	A - 9
IC1	G - 3
IC2	I - 2
IC5	F - 2
IC6	G - 2
IC7	E - 1
IC8	E - 2
IC9	I - 1
IC10	I - 4
Q1	H - 7
Q2	I - 11
Q4	H - 11
Q5	G - 4
Q6	H - 11
Q7	G - 3
Q8	H - 3
Q9	G - 3
Q10	F - 11
Q11	F - 8

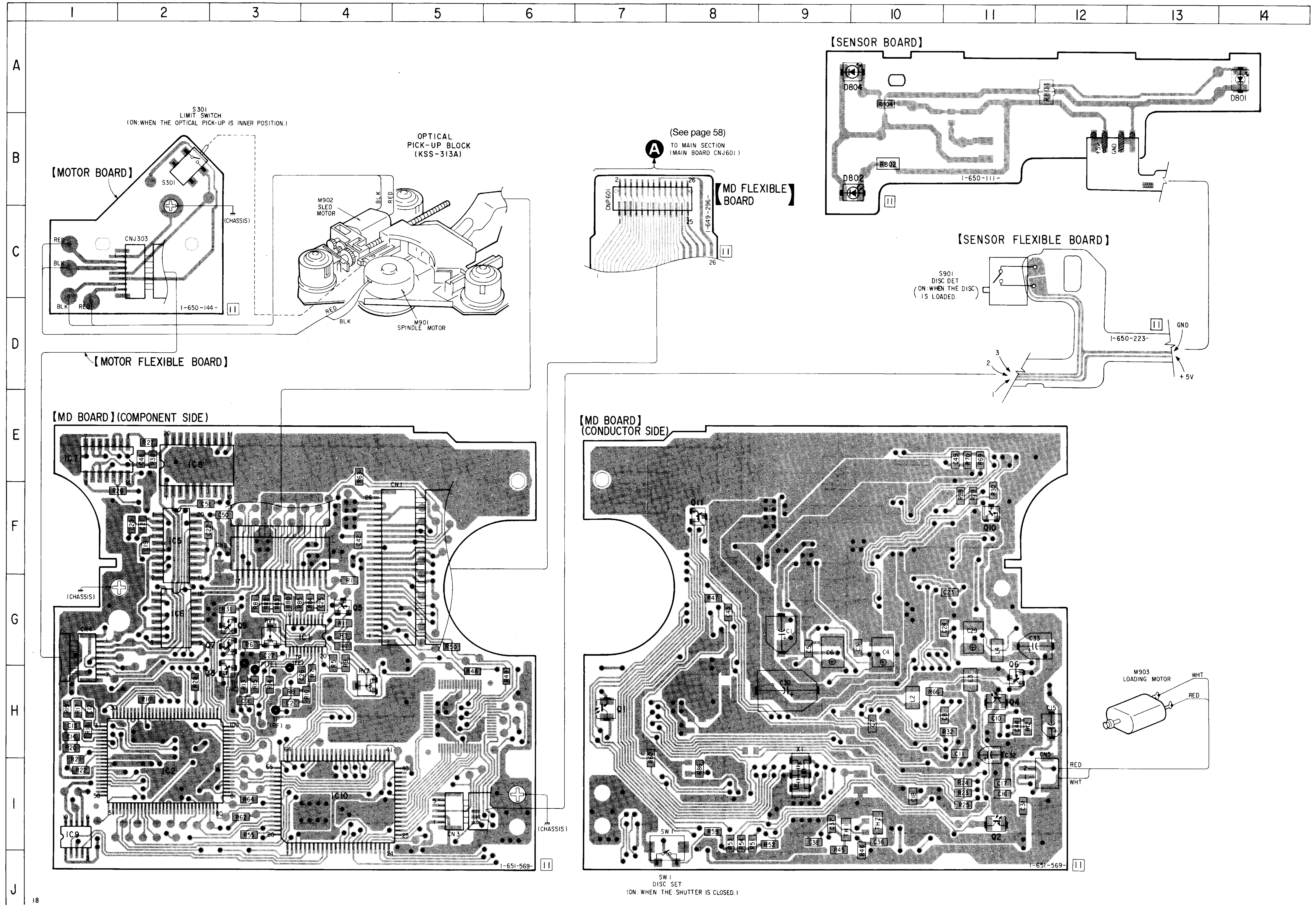
Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.

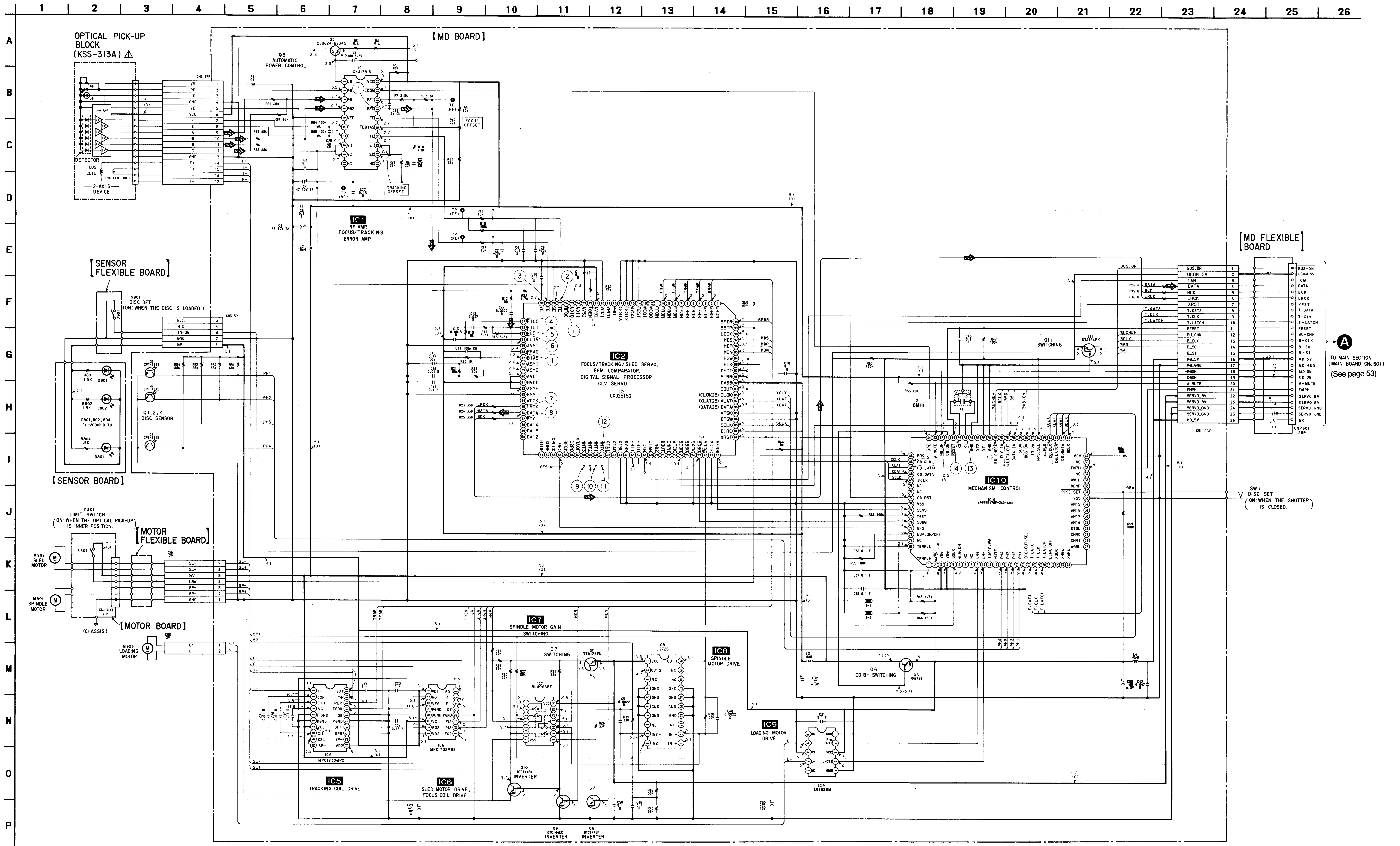
(The other layers'patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

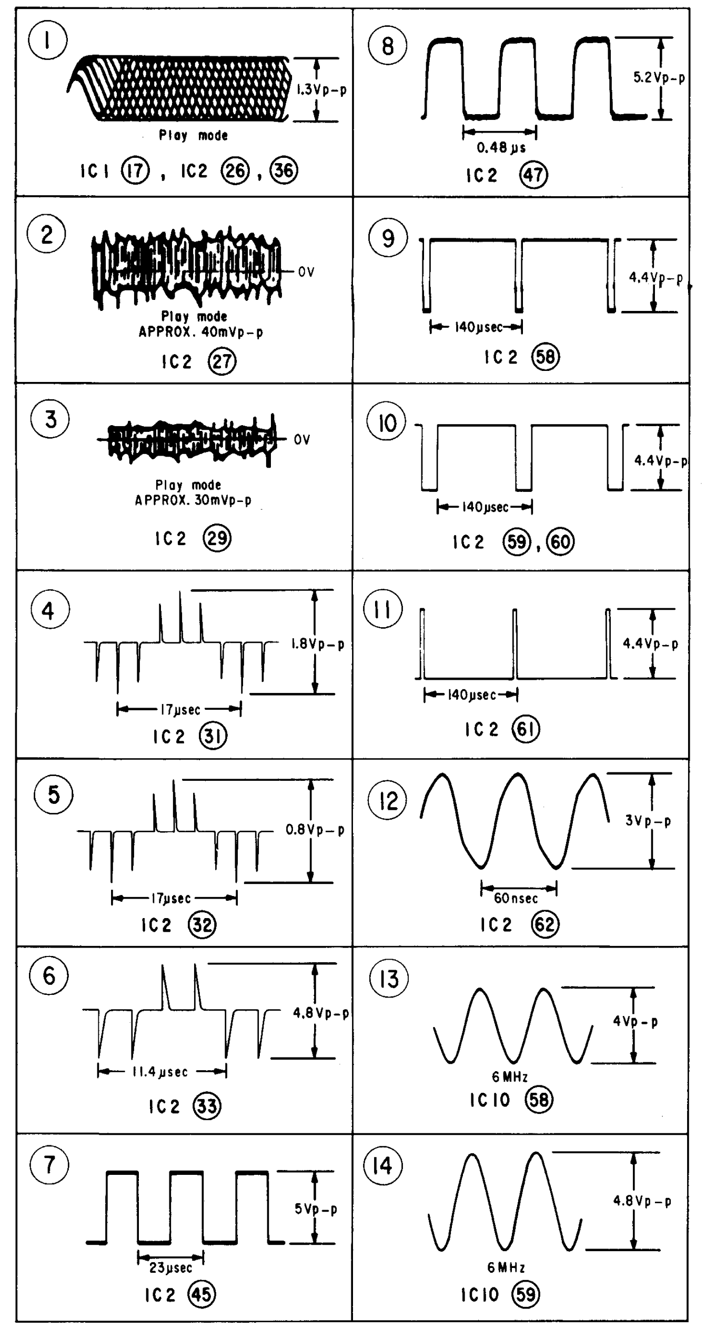
5-4. PRINTED WIRING BOARDS —CD Section— ●See page 37,38 for Semiconductor Lead Layouts.



5-5. SCHEMATIC DIAGRAM —CD Section— ●See page 43 and 44 for IC Block Diagrams.



●Waveforms



Note on Schematic Diagram:

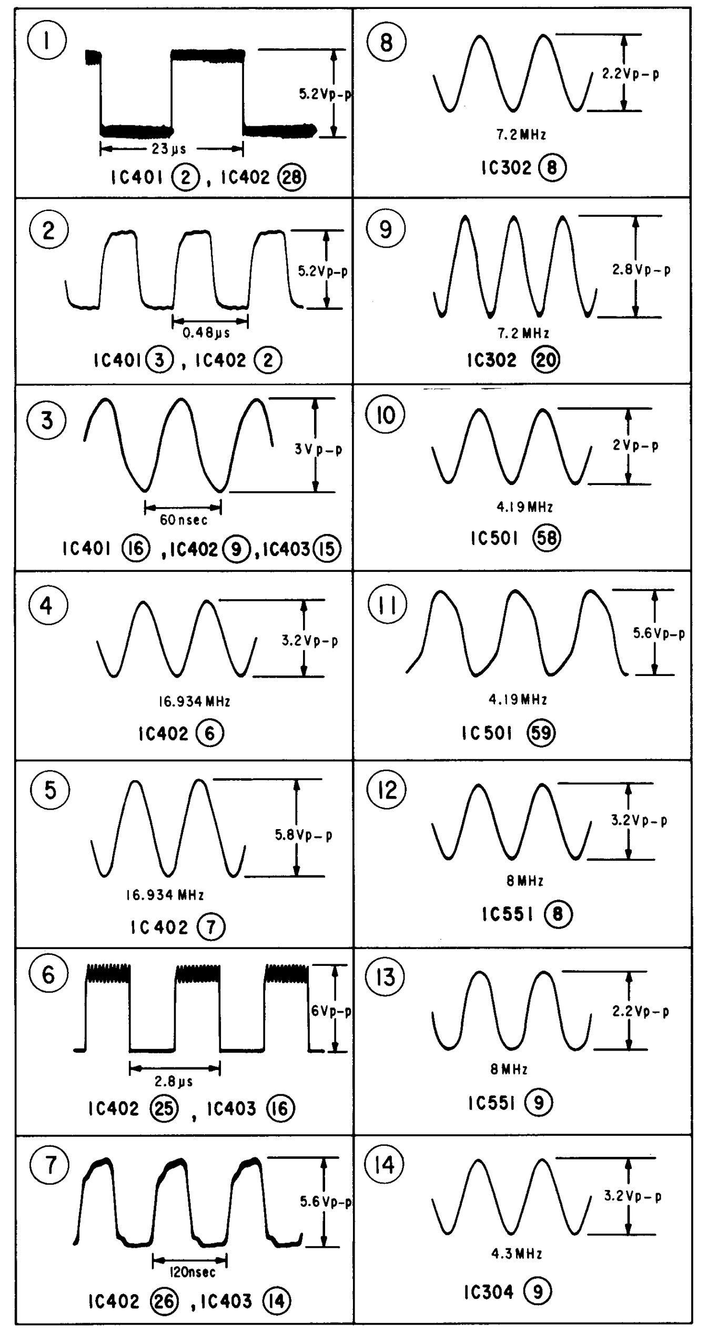
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¹/₄W or less unless otherwise specified.
- △ : internal component.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬ : B+ Line
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from ACC and BACK UP cord.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD play mode
  ( ): FM or AM
  * : Impossible to measure the voltage at the marked points.
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : CD

5-6. SCHEMATIC DIAGRAM —MAIN Section— •See page 57-61 for IC Block Diagrams.

• Waveforms

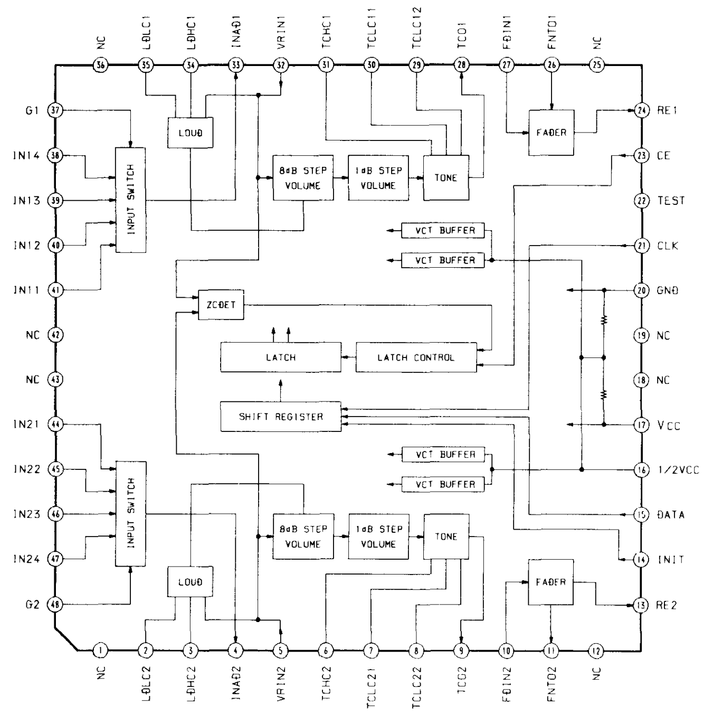


Note on Schematic Diagram:

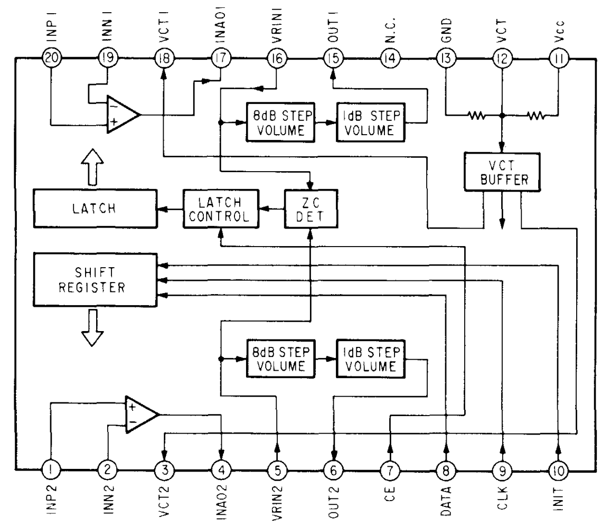
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▬▬ : B+ Line
- ▬ ▬ : B− Line
- ☐ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from ACC and BACK UP cord.
- Voltage and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : CD play mode
  ( ): FM
  < >: AM
  * : Impossible to measure the voltage at the marked points.
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  ⇨ : FM
  ⇨⇨ : AM
  ➾ : CD
  ➾➾ : Digital out
- Abbreviation
  G : German

● IC Block Diagrams —MAIN Section—

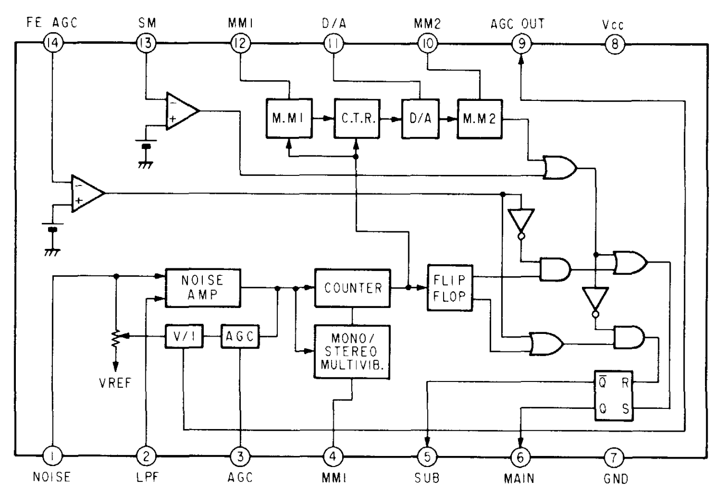
IC151 CXA1646Q



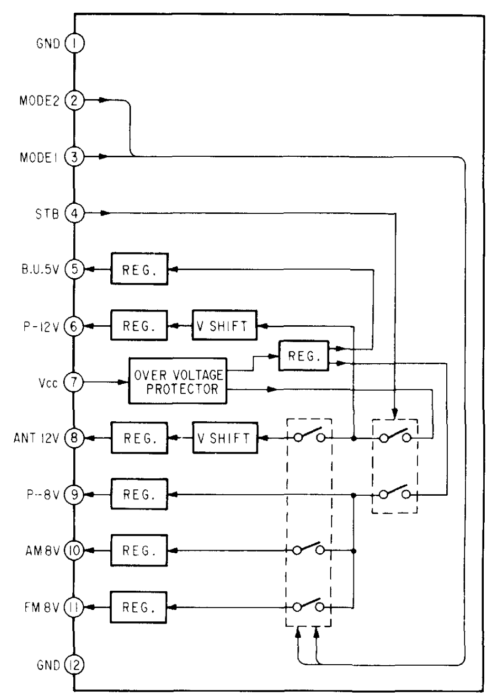
IC152 CXA1846M



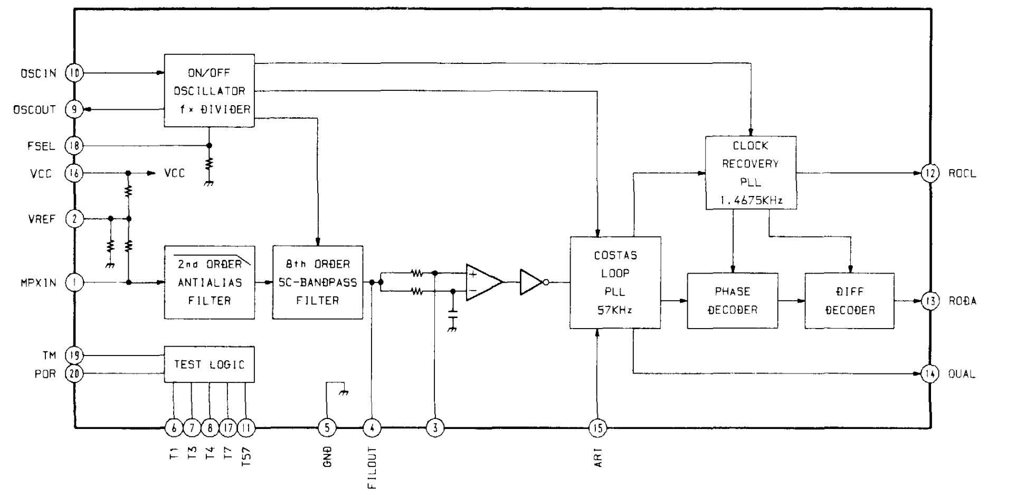
IC301 LA1061M



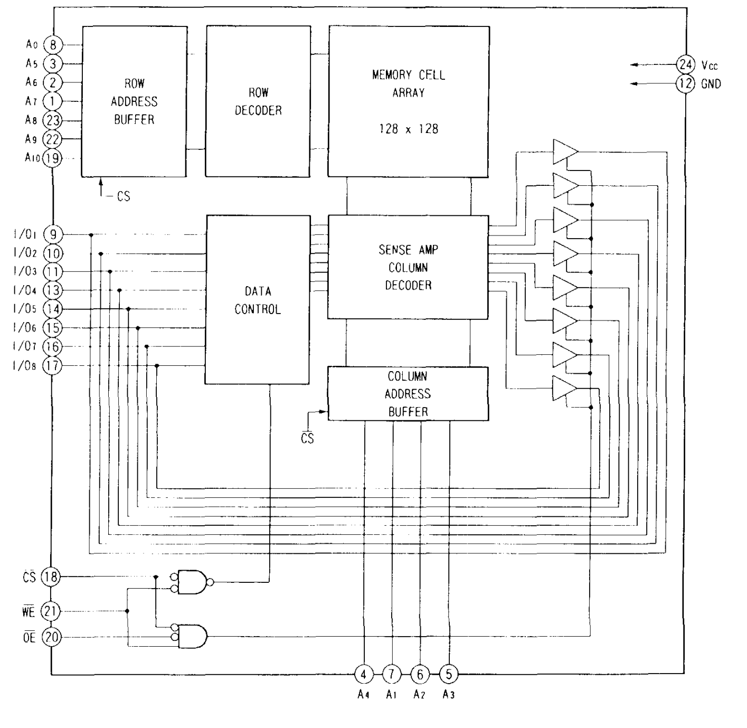
IC601 BA3910B-V3



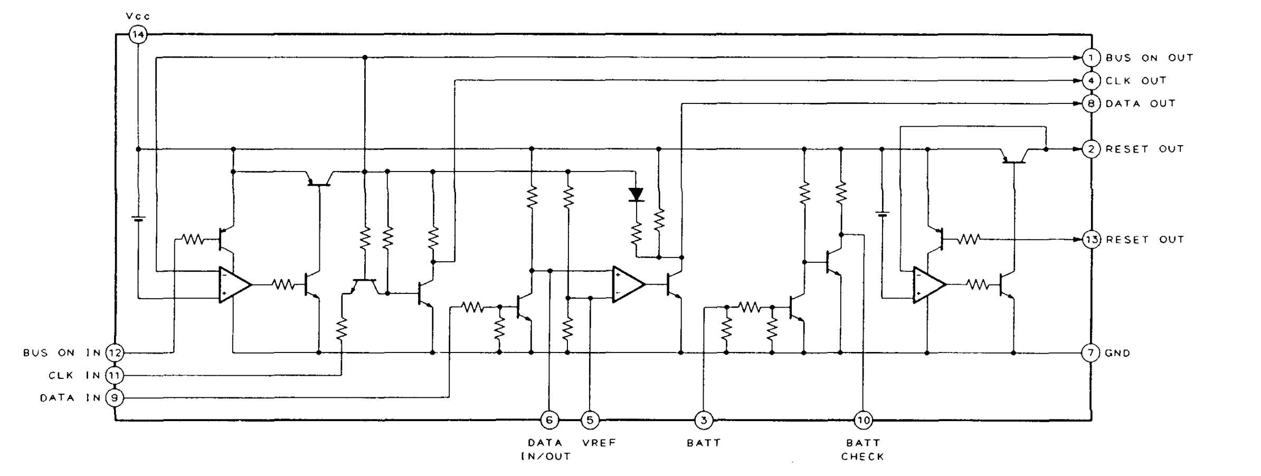
IC304 TDA7330BD-013TR (AEP, German MODEL ONLY)



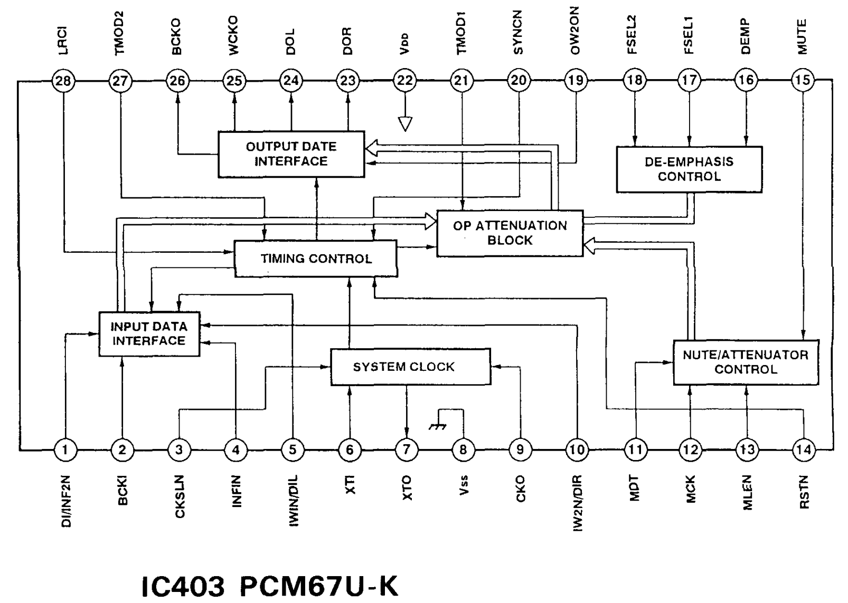
IC560 LH5116N3 (AEP, German MODEL ONLY)



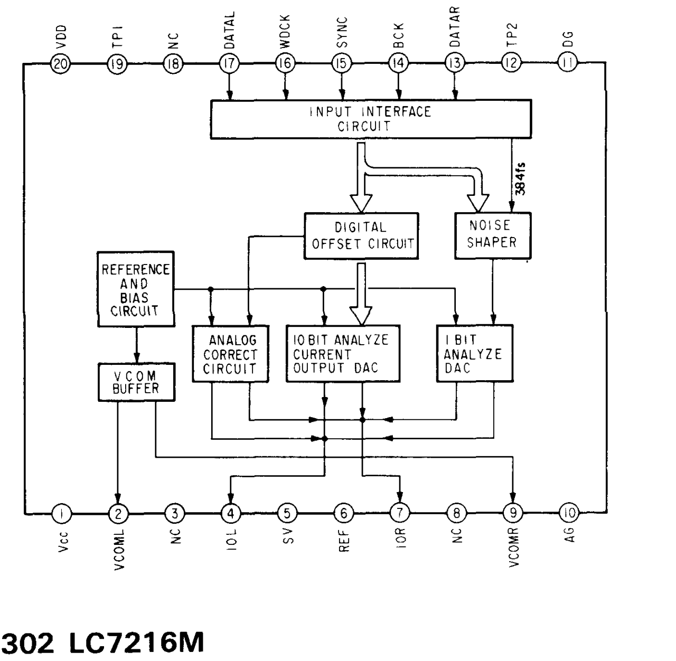
IC520 MM1175XFF



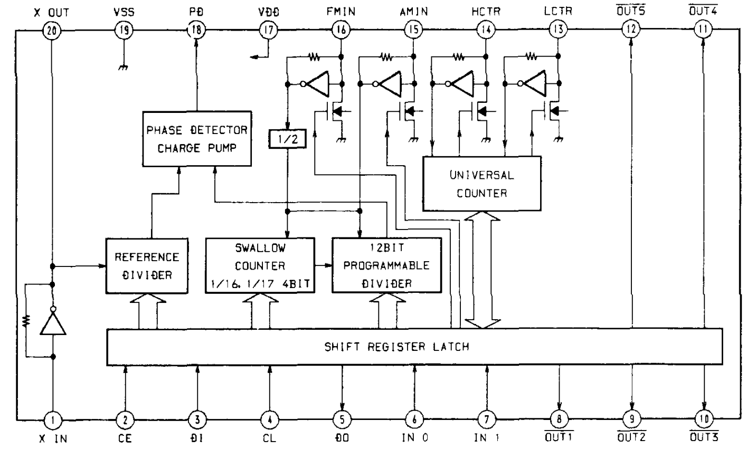
IC402 SM5843AS1-ET



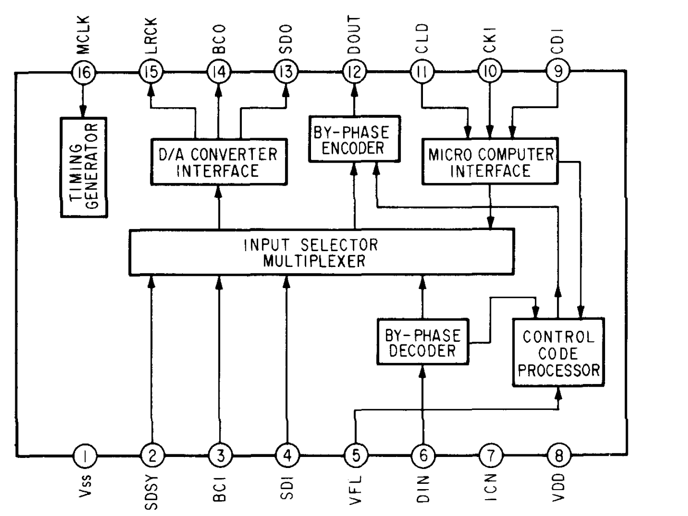
IC403 PCM67U-K



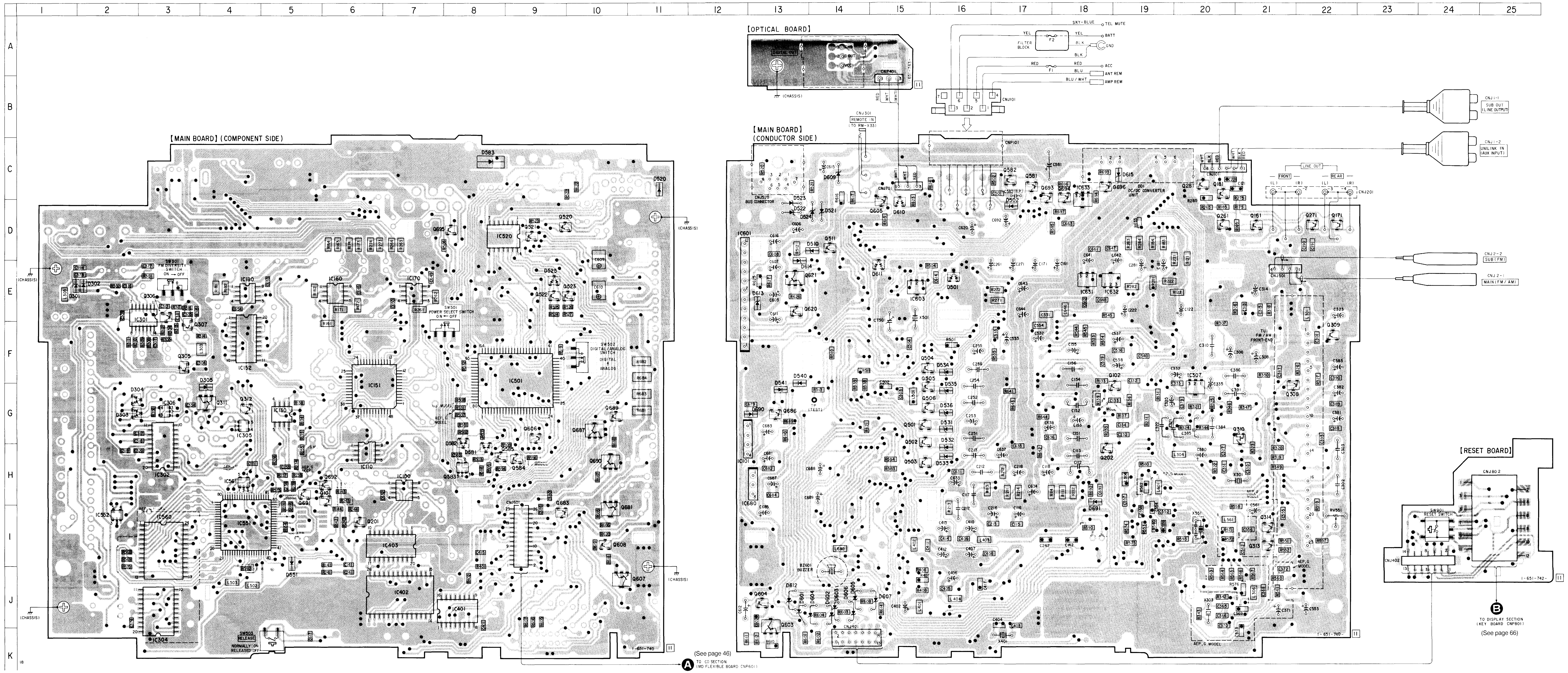
IC302 LC7216M



IC401 YSD221-ME2



5-7. PRINTED WIRING BOARDS —MAIN Section— ●See page 37,38 for Semiconductor Lead Layouts.



● **Semiconductor Location**

Ref. No.	Location	Ref. No.	Location	Ref. No.	Location
D301	E - 1	IC100	H - 7	Q308	G - 21
D302	E - 2	IC101	H - 12	Q309	F - 22
D303	G - 2	IC110	H - 6	Q310	G - 20
D304	G - 2	IC130	G - 5	Q311	G - 4
D305	F - 4	IC151	G - 6	Q312	G - 4
D501	E - 16	IC152	F - 4	○Q313	I - 21
D502	D - 17	IC160	E - 6	○Q314	I - 21
D510	D - 14	IC170	E - 7	Q501	G - 15
D520	C - 11	IC180	E - 4	Q502	G - 15
D521	D - 14	IC301	E - 3	Q503	H - 15
D522	D - 13	IC302	H - 3	Q504	F - 15
D523	D - 13	○IC304	K - 3	Q505	G - 15
D524	D - 14	IC305	G - 4	Q506	G - 15
D525	E - 9	IC306	G - 3	Q511	D - 14
D531	G - 16	IC307	F - 20	Q520	D - 9
D532	H - 16	IC401	J - 8	Q521	D - 9
D533	H - 16	IC402	J - 7	Q522	E - 9
D534	F - 16	IC403	I - 7	Q523	E - 10
D535	G - 16	IC501	F - 9	Q581	C - 17
D536	G - 16	IC520	D - 8	Q582	C - 17
D540	F - 13	IC551	I - 4	Q583	H - 8
D541	G - 13	IC552	I - 2	Q584	H - 9
D551	J - 5	○IC560	I - 3	Q585	H - 8
D581	H - 8	○IC561	H - 4	Q603	J - 13
D582	G - 8	IC601	D - 12	Q604	J - 13
D583	C - 8	IC603	E - 15	Q605	D - 15
D601	J - 13	IC631	E - 18	Q606	G - 9
D602	J - 14	IC632	E - 18	Q607	J - 10
D603	J - 14	IC633	C - 18	Q608	I - 10
D604	J - 14	IC680	H - 13	Q620	E - 13
D605	J - 14			Q621	E - 13
D606	J - 14	Q101	H - 6	Q681	I - 10
D607	J - 15	Q102	G - 18	Q683	I - 9
D609	C - 14	Q161	D - 21	Q686	G - 13
D610	D - 15	Q171	D - 22	Q687	G - 10
D611	E - 15	Q181	C - 20	Q689	G - 10
D612	J - 13	Q201	I - 6	Q690	H - 10
D613	E - 13	Q202	H - 18	Q691	H - 5
D614	E - 13	Q261	D - 20	Q692	H - 6
D615	C - 19	Q271	D - 22	Q693	C - 17
D690	G - 13	Q281	C - 20	Q694	C - 18
D691	H - 18	Q305	F - 3	Q695	D - 8
		Q306	E - 3	Q696	C - 18
		Q307	F - 3		

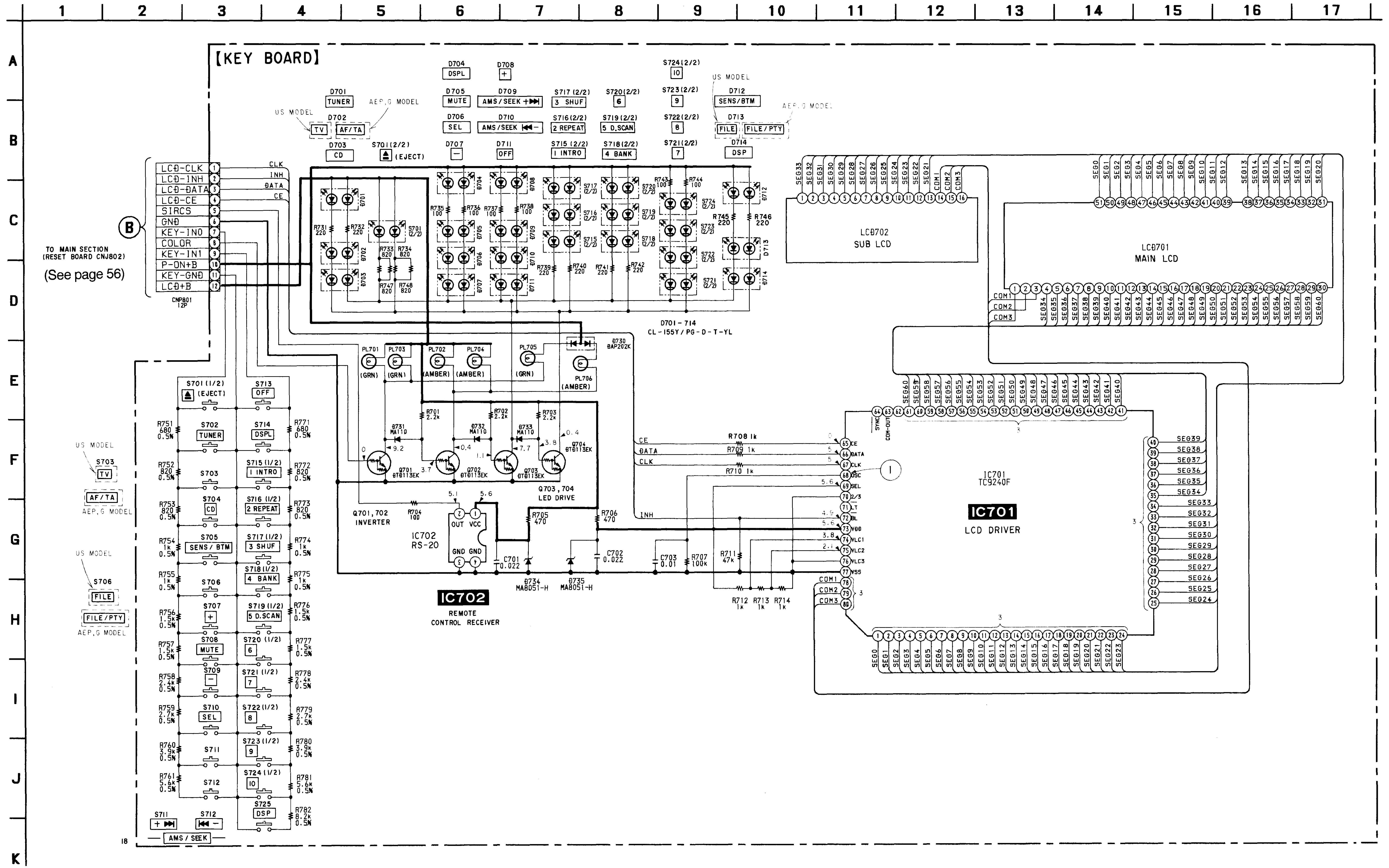
○: AEP, German model only

Note on Printed Wiring Board:
- ○—— : parts extracted from the component side.
- ● : Through hole.
- ░ : Pattern on the side which is seen.

Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

5-8. SCHEMATIC DIAGRAM —DISPLAY Section—



Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

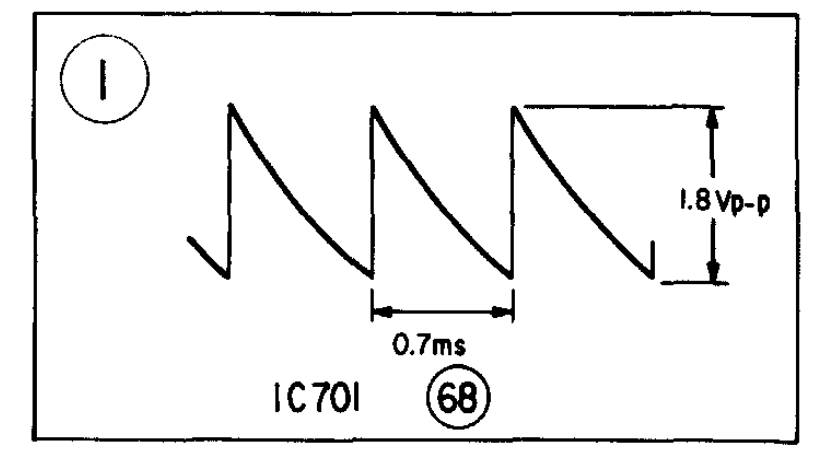
Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- Abbreviation
  G : German

• Semiconductor Location

Ref. No.	Location
D701	B - 11
D702	B - 10
D703	C - 9
D704	C - 3
D705	C - 2
D706	B - 2
D707	B - 1
D708	C - 3
D709	B - 2
D710	B - 2
D711	A - 1
D712	C - 11
D713	C - 10
D714	C - 9
D730	F - 9
D731	F - 3
D732	F - 3
D733	F - 2
D734	G - 2
D735	F - 5
IC701	E - 8
IC702	A - 2
Q701	F - 3
Q702	F - 3
Q703	F - 2
Q704	F - 2

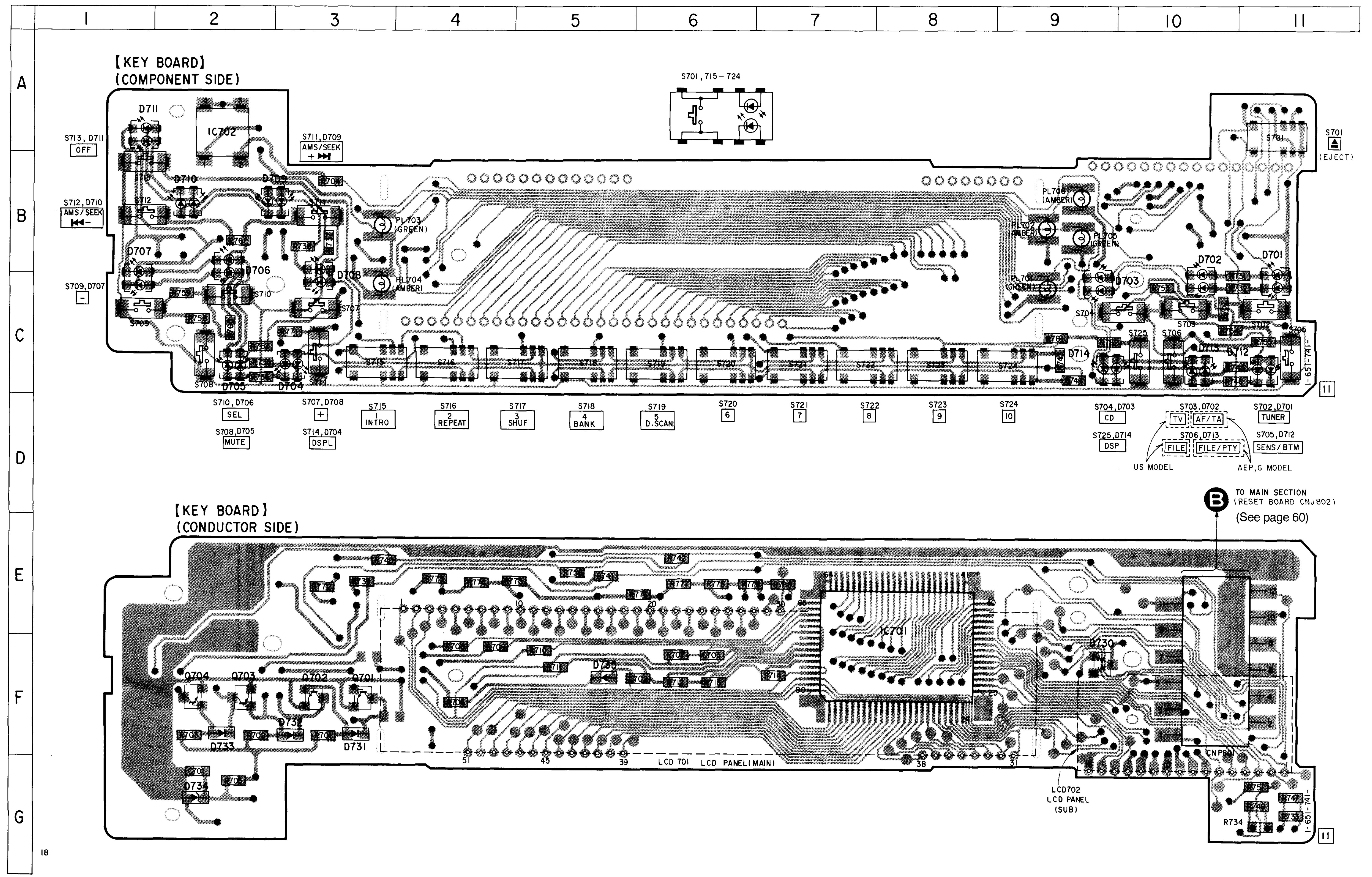
• Waveforms



Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- % : indicates tolerance.
- ▬ : B+ Line
- Power voltage is dc 14.4 V and fed with regulated dc power supply from ACC and BACK UP cord.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
  no mark : CD play mode
- Voltages are taken with a VOM (Input Impedance 10MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Abbreviation
  G : German

5-9. PRINTED WIRING BOARD —DISPLAY Section— • See page 37, 38 for Semiconductor Lead Layouts.



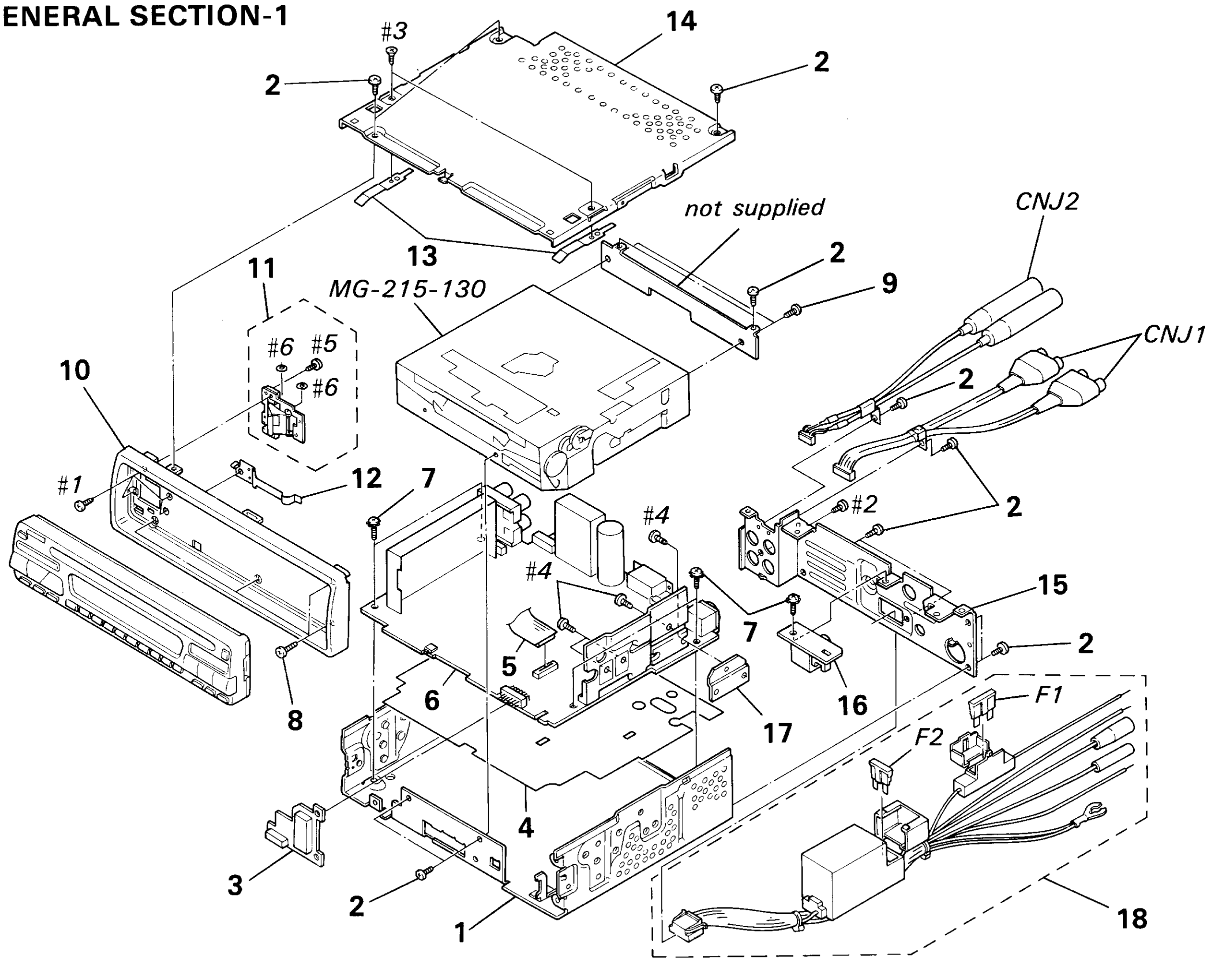
SECTION 6
EXPLODED VIEWS

NOTE:

- -xx,-x mean standardized parts, so they may have some differences from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE)...(RED)
  ↑ ↑
  Parts color Cabinet's color
- Items marked " ∗ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list and accessories and packing materials are given in the last of this parts list.
- Abbreviation
  G: German

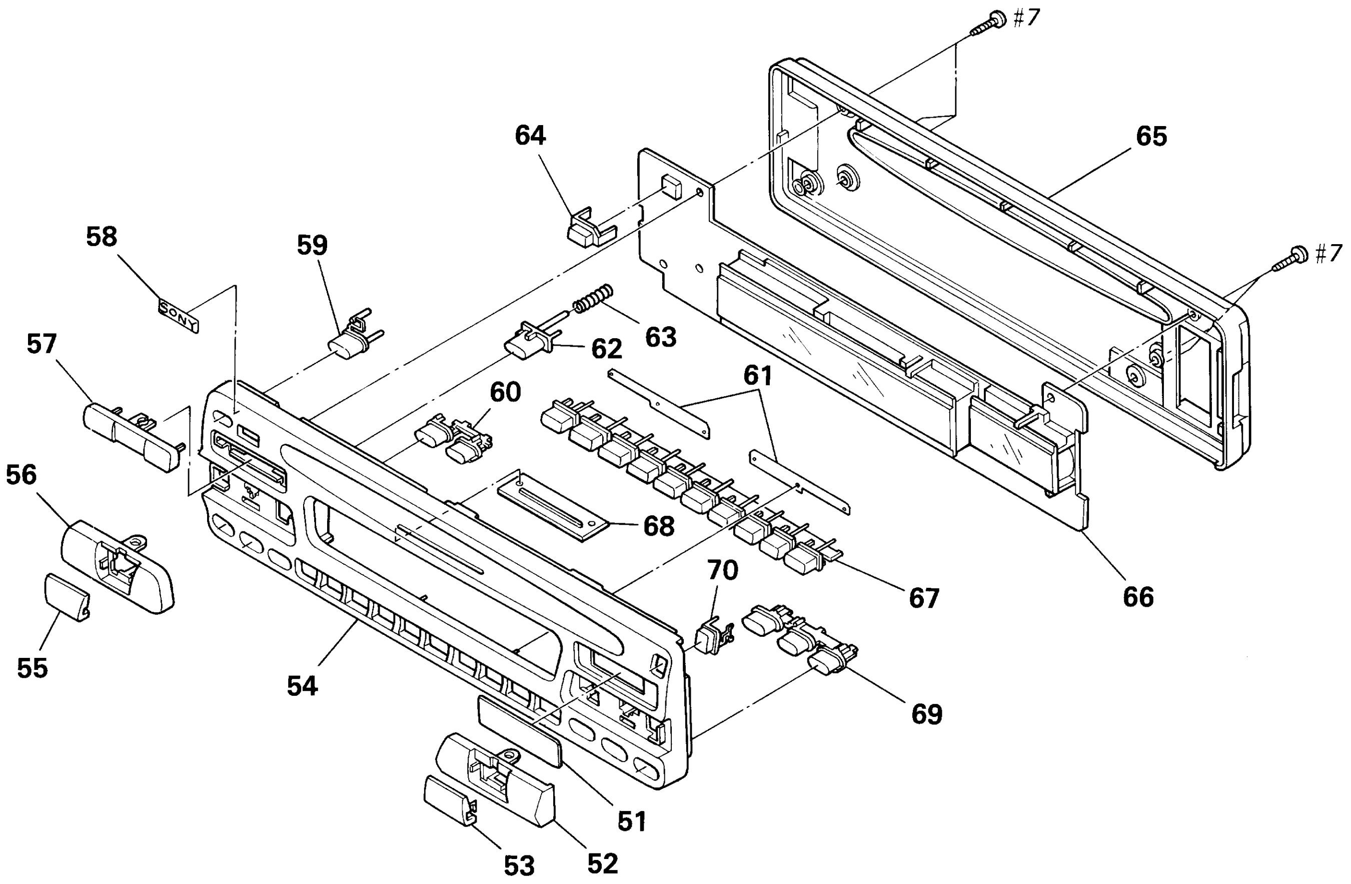
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

6-1. GENERAL SECTION-1



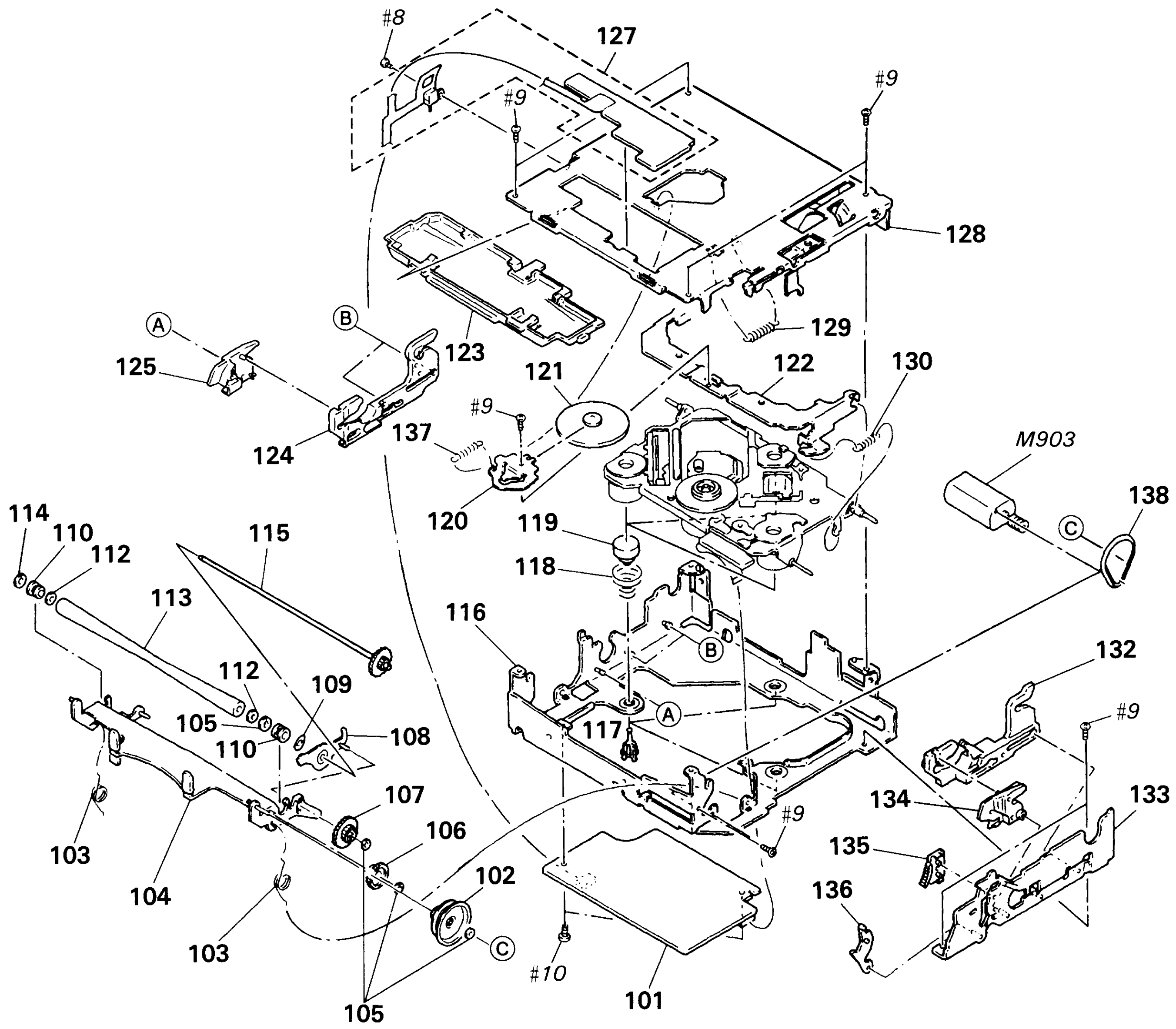
Ref.No.	Part No.	Description	Remark
∗1	X-3367-171-1	CHASSIS ASSY	
2	3-906-712-01	SCREW (2.6X6) (CU), +PTT	
∗3	1-651-742-11	RESET BOARD	
∗4	3-905-860-01	SHEET, INSULATING	
5	1-649-296-11	MD FLEXIBLE BOARD	
∗6	A-3295-992-A	MAIN BOARD, COMPLETE (AEP)	
∗6	A-3298-112-A	MAIN BOARD, COMPLETE (US)	
∗6	A-3298-119-A	MAIN BOARD, COMPLETE (G)	
7	3-906-713-01	SCREW (+PTT), GROUND POINT	
8	3-907-995-01	SCREW (2.6X8) (BZN), +PTT	
9	3-363-433-02	SCREW	
10	X-3367-215-1	PANEL (SUB) ASSY, SUB	
11	X-3366-931-1	LOCK ASSY	
12	3-904-181-01	SPRING (SW)	
∗13	3-386-597-01	PLATE, LOCK	
∗14	3-905-856-01	COVER	
∗15	3-905-857-01	PANEL, BACK	
∗16	1-651-743-11	OPTICAL BOARD	
∗17	3-911-196-01	BRACKET	
18	1-765-447-11	CORD (WITH CONNECTOR) (POWER)	
CNJ1	1-751-657-11	CORD (WITH CONNECTOR) (RCA) (SUB OUT, UNILINK IN)	
CNJ2	1-751-721-11	CORD (WITH CONNECTOR) (ANT) (MAIN, SUB)	
F1	1-532-731-11	FUSE (BRADE TYPE) (3A)	
F2	1-532-731-11	FUSE (BRADE TYPE) (3A)	

6-2. GENERAL SECTION-2



Ref.No.	Part No.	Description	Remark
51	3-905-853-01	PLATE (SUB), INDICATION	
52	3-389-666-41	BUTTON (TUNER)	
53	3-389-664-21	BUTTON (V/A) (AEP,G)	
53	3-389-664-91	BUTTON (V/A) (US)	
54	3-905-839-01	PANEL, FRONT (AEP,G)	
54	3-905-839-11	PANEL, FRONT (US)	
55	3-389-660-01	BUTTON (SELECT)	
56	3-389-668-01	BUTTON (+ -)	
57	3-905-842-01	BUTTON (SEEK)	
58	3-904-194-01	EMBLEM (NO. 2.5), SONY	
59	3-905-841-01	BUTTON (OFF)	
60	3-905-844-01	BUTTON (2 GANG)	
61	3-905-848-01	SHEET (PANEL)	
62	3-905-845-01	BUTTON (RELEASE)	
63	3-904-193-01	SPRING (RELEASE)	
64	3-905-846-02	FILTER (RAY CATCHER)	
65	3-905-840-01	PANEL, FRONT BACK	
*66	A-3222-721-A	KEY BOARD, COMPLETE (AEP)	
*66	A-3222-761-A	KEY BOARD, COMPLETE (US)	
*66	A-3222-763-A	KEY BOARD, COMPLETE (G)	
67	3-908-252-11	BUTTON (PRESET)	
*68	3-905-847-01	PLATE (CD), LIGHTGUIDE	
69	3-389-671-01	BUTTON (DSP)	
70	3-905-843-01	BUTTON (EJECT)	

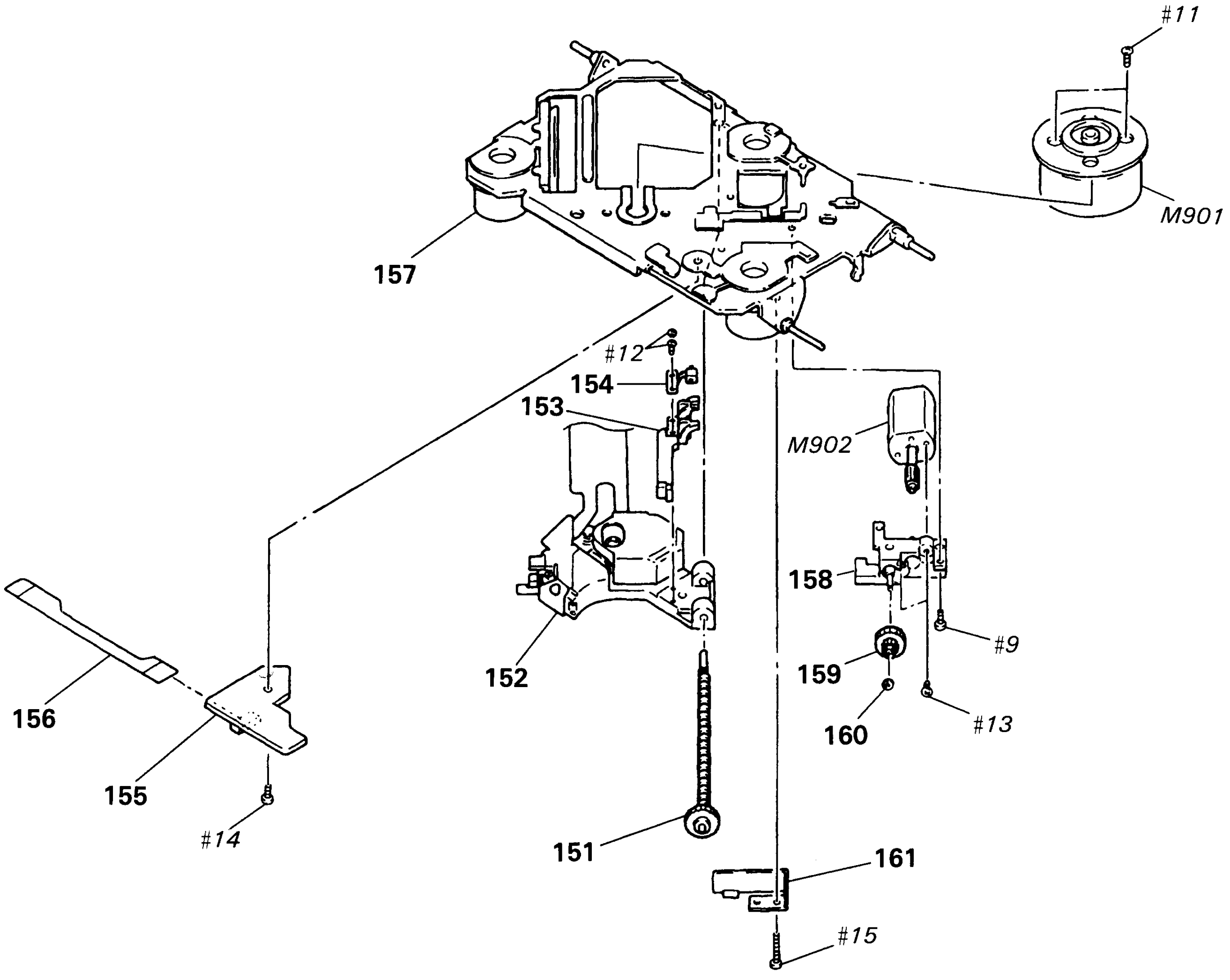
6-3. MD SECTION-1 (MG-215-130)



Ref.No.	Part No.	Description	Remark
*101	A-3295-984-A	MD BOARD, COMPLETE	
102	3-384-894-02	GEAR (R1)	
103	3-384-900-01	SPRING (PRESS)	
*104	X-3366-857-1	ARM ASSY, ROLLER	
105	3-578-242-11	WASHER	
106	3-384-895-01	GEAR (R2)	
107	3-384-896-01	GEAR (DOWN)	
108	X-3366-858-3	ARM ASSY, FRICTION	
109	3-384-899-01	SPRING (FRICTION)	
110	3-384-892-01	BEARING (ROLLER)	
112	3-701-438-11	WASHER, 2.5	
113	3-323-231-11	ROLLER (T)	
114	3-386-150-01	RING (ROLLER), RETAINING	
115	A-3252-591-A	GEAR ASSY, ROLLER	
*116	X-3366-852-1	CHASSIS (M) ASSY	
117	3-384-923-01	SHAFT (DAMPER)	
118	3-907-588-01	SPRING (FL2)	
119	3-384-814-01	DAMPER	

Ref.No.	Part No.	Description	Remark
*120	3-384-915-11	BRACKET (CP)	
*121	3-384-918-01	RETAINER (DISC)	
122	3-384-908-11	ARM, CHUCKING	
*123	3-906-923-03	GUIDE (DISK 2)	
124	3-384-888-01	SLIDER (L)	
125	3-384-887-01	LEVER (L)	
*127	A-3222-716-A	SENSOR BOARD, COMPLETE	
*128	X-3366-854-1	CHASSIS (T) ASSY	
129	3-384-881-02	SPRING (12)	
130	3-384-917-01	SPRING (CH)	
132	X-3366-102-1	SLIDER (R) ASSY	
*133	X-3365-911-1	CHASSIS (R) ASSY	
134	3-384-889-01	LEVER (R)	
135	3-384-897-01	GEAR (RACK)	
136	3-384-891-01	LEVER (ST)	
137	3-388-331-01	SPRING (T)	
138	3-387-776-01	BELT (L)	
M903	A-3252-580-A	MOTOR (L) ASSY (LOADING)	

6-4. MD SECTION-2 (MG-215-130)



The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
151	A-3252-586-A	SHAFT (SL) ASSY	
⚠152	8-848-283-11	DEVICE, OPTICAL KSS-313A	
153	3-384-922-01	GEAR (SL FEED)	
154	3-384-921-01	SPRING (SL FEED)	
*155	1-650-144-11	MOTOR BOARD	
156	1-646-402-11	MOTOR FLEXIBLE BOARD	
*157	X-3365-916-1	CHASSIS (OPT) ASSY (OUTSERT)	

Ref.No.	Part No.	Description	Remark
158	X-3366-100-1	BASE (DRIVING) ASSY	
159	3-384-912-01	GEAR (K2)	
160	3-570-615-00	POLY-WASHER (DIA.1.2)	
161	3-384-913-11	SPRING (THRUST RETAINER)	
M901	X-3368-280-1	MOTOR (SPINDLE) ASSY	
M902	A-3252-585-A	MOTOR (SL) ASSY (SLED)	

SECTION 7
ELECTRICAL PARTS LIST

KEY

NOTE:
- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Items marked "＊" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u : μ, for example:
  uA··· : μA···, uPA··· : μPA···, uPB··· : μPB···,
  uPC··· : μPC···, uPD··· : μPD···
- CAPACITORS
  uF : μF
- COILS
  uH : μH
- Abbreviation
  G: German

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref.No.	Part No.	Description	Remark
＊	A-3222-721-A	KEY BOARD, COMPLETE (AEP)	
＊	A-3222-761-A	KEY BOARD, COMPLETE (US)	
＊	A-3222-763-A	KEY BOARD, COMPLETE (G)	
		**************************	
＊	3-389-673-01	PLATE (M:LCD), LIGHT GUIDE	
＊	3-389-753-01	REFLECTOR (M), SHEET	
＊	3-905-849-01	HOLDER (MAIN)	
＊	3-905-850-01	HOLDER (SUB)	
＊	3-905-851-01	PLATE (SUB), LUGHT GUIDE	
＊	3-905-852-01	ILLUMINATOR (SUB)	
	3-911-205-01	SHEET (B2)	
	3-913-363-01	SHEET (A2)	
	3-913-364-01	SHEET (C2)	
		< CAPACITOR >	
C701	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C702	1-163-037-11	CERAMIC CHIP 0.022uF 10%	25V
C703	1-164-232-11	CERAMIC CHIP 0.01uF	50V
		< CONNECTOR >	
＊CNP801	1-691-557-21	PIN, CONNECTOR 12P	
		< DIODE >	
D701	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (TUNER)	
D702	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (AF/TA, TV)	
D703	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (CD)	
D704	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (DSPL)	
D705	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (MUTE)	
D706	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (SEL)	
D707	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (-)	
D708	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (+)	
D709	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (AMS/SEEK +⏭)	
D710	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (AMS/SEEK ⏮-)	
D711	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (OFF)	
D712	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (SENS/BTM)	
D713	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (FILE/PTY, PTY)	
D714	8-719-044-71	DIODE CL-155Y/PG-D-T-YL (DSP)	
D730	8-719-914-44	DIODE DAP202K	

Ref.No.	Part No.	Description	Remark
D731	8-719-404-46	DIODE MA110	
D732	8-719-404-46	DIODE MA110	
D733	8-719-404-46	DIODE MA110	
D734	8-719-422-43	DIODE MA8051-H	
D735	8-719-422-43	DIODE MA8051-H	
		< IC >	
IC701	8-759-246-16	IC TC9240F	
IC702	8-759-515-60	IC RS-20	
		< LIQUID CRYSTAL DISPLAY >	
LCD701	1-810-315-11	DISPLAY PANEL, LIQUID CRYSTAL (MAIN)	
LCD702	1-810-316-11	DISPLAY PANEL, LIQUID CRYSTAL (SUB)	
		< PILOT LAMP >	
PL701	1-517-181-11	LAMP, PILOT (10V/60mA) (GREEN)	
PL702	1-517-181-21	LAMP, PILOT (10V/60mA) (AMBER)	
PL703	1-517-181-11	LAMP, PILOT (10V/60mA) (GREEN)	
PL704	1-517-181-21	LAMP, PILOT (10V/60mA) (AMBER)	
PL705	1-517-181-11	LAMP, PILOT (10V/60mA) (GREEN)	
PL706	1-517-181-21	LAMP, PILOT (10V/60mA) (AMBER)	
		< TRANSISTOR >	
Q701	8-729-904-66	TRANSISTOR DTD113EK	
Q702	8-729-904-66	TRANSISTOR DTD113EK	
Q703	8-729-904-66	TRANSISTOR DTD113EK	
Q704	8-729-904-66	TRANSISTOR DTD113EK	
		< RESISTOR >	
R701	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R702	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R703	1-216-057-00	METAL CHIP 2.2K 5%	1/10W
R704	1-216-025-00	METAL CHIP 100 5%	1/10W
R705	1-216-041-00	METAL CHIP 470 5%	1/10W
R706	1-216-041-00	METAL CHIP 470 5%	1/10W
R707	1-216-097-00	METAL CHIP 100K 5%	1/10W
R708	1-216-049-00	METAL CHIP 1K 5%	1/10W
R709	1-216-049-00	METAL CHIP 1K 5%	1/10W
R710	1-216-049-00	METAL CHIP 1K 5%	1/10W

KEY MAIN

Ref.No.	Part No.	Description	Remark
R711	1-216-089-91	METAL GLAZE 47K 5% 1/10W	
R712	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R713	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R714	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R731	1-216-033-00	METAL CHIP 220 5% 1/10W	
R732	1-216-033-00	METAL CHIP 220 5% 1/10W	
R733	1-216-047-00	METAL CHIP 820 5% 1/10W	
R734	1-216-047-00	METAL CHIP 820 5% 1/10W	
R735	1-216-025-00	METAL CHIP 100 5% 1/10W	
R736	1-216-025-00	METAL CHIP 100 5% 1/10W	
R737	1-216-025-00	METAL CHIP 100 5% 1/10W	
R738	1-216-025-00	METAL CHIP 100 5% 1/10W	
R739	1-216-033-00	METAL CHIP 220 5% 1/10W	
R740	1-216-033-00	METAL CHIP 220 5% 1/10W	
R741	1-216-033-00	METAL CHIP 220 5% 1/10W	
R742	1-216-033-00	METAL CHIP 220 5% 1/10W	
R743	1-216-025-00	METAL CHIP 100 5% 1/10W	
R744	1-216-025-00	METAL CHIP 100 5% 1/10W	
R745	1-216-033-00	METAL CHIP 220 5% 1/10W	
R746	1-216-033-00	METAL CHIP 220 5% 1/10W	
R747	1-216-047-00	METAL CHIP 820 5% 1/10W	
R748	1-216-047-00	METAL CHIP 820 5% 1/10W	
R751	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
R752	1-216-649-11	METAL CHIP 820 0.5% 1/10W	
R753	1-216-649-11	METAL CHIP 820 0.5% 1/10W	
R754	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R755	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R756	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
R757	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
R758	1-216-660-11	METAL CHIP 2.4K 0.5% 1/10W	
R759	1-216-661-11	METAL CHIP 2.7K 0.5% 1/10W	
R760	1-216-665-11	METAL CHIP 3.9K 0.5% 1/10W	
R761	1-216-669-11	METAL CHIP 5.6K 0.5% 1/10W	
R771	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
R772	1-216-649-11	METAL CHIP 820 0.5% 1/10W	
R773	1-216-649-11	METAL CHIP 820 0.5% 1/10W	
R774	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R775	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R776	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
R777	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
R778	1-216-660-11	METAL CHIP 2.4K 0.5% 1/10W	
R779	1-216-661-11	METAL CHIP 2.7K 0.5% 1/10W	
R780	1-216-665-11	METAL CHIP 3.9K 0.5% 1/10W	
R781	1-216-669-11	METAL CHIP 5.6K 0.5% 1/10W	
R782	1-216-673-11	METAL CHIP 8.2K 0.5% 1/10W	
		< SWITCH >	
S701	1-692-715-21	SWITCH, TACT (WITH LED) (⏏)	
S702	1-692-037-31	SWITCH, KEY BOARD (TUNER)	
S703	1-692-037-31	SWITCH, KEY BOARD (AF/TA,TV)	
S704	1-692-037-31	SWITCH, KEY BOARD (CD)	
S705	1-692-037-31	SWITCH, KEY BOARD (SENS/BTM)	
S706	1-692-037-31	SWITCH, KEY BOARD (FILE/PTY,PTY)	
S707	1-692-037-31	SWITCH, KEY BOARD (+)	
S708	1-692-037-31	SWITCH, KEY BOARD (MUTE)	
S709	1-692-037-31	SWITCH, KEY BOARD (-)	
S710	1-692-037-31	SWITCH, KEY BOARD (SEL)	
S711	1-692-037-31	SWITCH, KEY BOARD (AMS/SEEK + ⏭)	
S712	1-692-037-31	SWITCH, KEY BOARD (AMS/SEEK ⏮ -)	
S713	1-692-037-31	SWITCH, KEY BOARD (OFF)	
S714	1-692-037-31	SWITCH, KEY BOARD (DSPL)	
S715	1-692-715-21	SWITCH, TACT (WITH LED) (1/INTRO)	
S716	1-692-715-21	SWITCH, TACT (WITH LED) (2/REPEAT)	
S717	1-692-715-21	SWITCH, TACT (WITH LED) (3/SHUF)	
S718	1-692-715-21	SWITCH, TACT (WITH LED) (4/BANK)	
S719	1-692-715-21	SWITCH, TACT (WITH LED) (5/D.SCAN)	
S720	1-692-715-21	SWITCH, TACT (WITH LED) (6)	
S721	1-692-715-21	SWITCH, TACT (WITH LED) (7)	
S722	1-692-715-21	SWITCH, TACT (WITH LED) (8)	
S723	1-692-715-21	SWITCH, TACT (WITH LED) (9)	
S724	1-692-715-21	SWITCH, TACT (WITH LED) (10)	
S725	1-692-037-31	SWITCH, KEY BOARD (DSP)	

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Ref.No.	Part No.	Description	Remark
*	A-3295-992-A	MAIN BOARD, COMPLETE (AEP)	
*	A-3298-112-A	MAIN BOARD, COMPLETE (US)	
*	A-3298-119-A	MAIN BOARD, COMPLETE (G)	
		*************************	
	1-649-296-11	MD FLEXIBLE BOARD	
*	3-911-196-01	BRACKET	
	7-621-770-67	SCREW +P 2.6X6	
		< BUZZER >	
BZ601	1-504-468-21	BUZZER, PIEZOELECTRIC	
		< CAPACITOR >	
C112	1-130-476-00	MYLAR 0.0027uF 5% 50V	
C113	1-130-481-00	MYLAR 0.0068uF 5% 50V	
C115	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C116	1-126-285-11	ELECT 47uF 20% 16V	
C117	1-130-467-00	MYLAR 470PF 5% 50V	
C118	1-107-457-61	ELECT 10uF 20% 35V	
C121	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	
C122	1-107-457-61	ELECT 10uF 20% 35V	
C132	1-164-004-11	CERAMIC CHIP 0.1uF 10% 25V	
C133	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
C134	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
C141	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	

Ref.No.	Part No.	Description				Remark
C142	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C151	1-136-164-00	FILM	0.082uF	5%	50V	
C152	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C153	1-107-457-61	ELECT	10uF	20%	35V	
C154	1-130-478-00	MYLAR	0.0039uF	5%	50V	
C155	1-107-457-61	ELECT	10uF	20%	35V	
C156	1-136-169-00	FILM	0.22uF	5%	50V	
C161	1-107-457-61	ELECT	10uF	20%	35V	
C171	1-107-457-61	ELECT	10uF	20%	35V	
C181	1-107-457-61	ELECT	10uF	20%	35V	
C190	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	50V	
C191	1-163-263-11	CERAMIC CHIP	330PF	5%	50V	
C212	1-130-476-00	MYLAR	0.0027uF	5%	50V	
C213	1-130-481-00	MYLAR	0.0068uF	5%	50V	
C215	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C216	1-126-285-11	ELECT	47uF	20%	16V	
C217	1-130-467-00	MYLAR	470PF	5%	50V	
C218	1-107-457-61	ELECT	10uF	20%	35V	
C221	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C222	1-107-457-61	ELECT	10uF	20%	35V	
C232	1-164-004-11	CERAMIC CHIP	0.1uF	10%	25V	
C233	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C234	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C241	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C242	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C251	1-136-164-00	FILM	0.082uF	5%	50V	
C252	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C253	1-107-457-61	ELECT	10uF	20%	35V	
C254	1-130-478-00	MYLAR	0.0039uF	5%	50V	
C255	1-107-457-61	ELECT	10uF	20%	35V	
C256	1-136-169-00	FILM	0.22uF	5%	50V	
C261	1-107-457-61	ELECT	10uF	20%	35V	
C271	1-107-457-61	ELECT	10uF	20%	35V	
C281	1-107-457-61	ELECT	10uF	20%	35V	
C301	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C302	1-136-156-00	FILM	0.018uF	5%	50V	
C303	1-136-156-00	FILM	0.018uF	5%	50V	
C304	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C305	1-163-023-00	CERAMIC CHIP	0.015uF	5%	50V	
C306	1-124-234-00	ELECT	22uF	20%	16V	
C307	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V	
C308	1-126-295-11	ELECT	10uF	20%	35V	
C309	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V	
C310	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C311	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C312	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
C313	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C314	1-126-295-11	ELECT	10uF	20%	35V	
C315	1-164-182-11	CERAMIC CHIP	0.0033uF	10%	50V	
C316	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V	
C317	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C318	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C319	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C320	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	
C321	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C322	1-110-351-11	MYLAR	0.001uF	5%	50V	
C323	1-124-229-00	ELECT	33uF	20%	10V	
C325	1-107-478-61	ELECT	47uF	20%	16V	
C327	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C330	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C331	1-163-097-00	CERAMIC CHIP	15PF	5%	50V	
C332	1-107-478-61	ELECT	47uF	20%	16V	
C333	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C334	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C335	1-126-295-11	ELECT	10uF	20%	35V	
C365	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	(AEP,G)
C366	1-163-237-11	CERAMIC CHIP	27PF	5%	50V	(AEP,G)
C368	1-163-038-00	CERAMIC CHIP	0.1uF		25V	(AEP,G)
C369	1-163-038-00	CERAMIC CHIP	0.1uF		25V	(AEP,G)
C370	1-164-232-11	CERAMIC CHIP	0.01uF		50V	(AEP,G)
C371	1-126-157-11	ELECT	10uF	20%	16V	(AEP,G)
C372	1-163-127-00	CERAMIC CHIP	270PF	5%	50V	(AEP,G)
C373	1-163-989-11	CERAMIC CHIP	0.033uF	10%	25V	(AEP,G)
C374	1-163-251-11	CERAMIC CHIP	100PF	5%	50V	(AEP,G)
C377	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C378	1-163-235-11	CERAMIC CHIP	22PF	5%	50V	
C379	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C380	1-107-478-61	ELECT	47uF	20%	16V	
C381	1-107-478-61	ELECT	47uF	20%	16V	
C382	1-107-478-61	ELECT	47uF	20%	16V	
C383	1-107-478-61	ELECT	47uF	20%	16V	
C384	1-136-158-00	FILM	0.027uF	5%	50V	
C385	1-130-475-00	MYLAR	0.0022uF	5%	50V	
C386	1-136-169-00	FILM	0.22uF	5%	50V	
C387	1-162-587-11	CERAMIC CHIP	0.039uF	10%	25V	
C388	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C389	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C390	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C391	1-130-479-00	MYLAR	0.0047uF	5%	50V	
C394	1-164-232-11	CERAMIC CHIP	0.01uF		50V	
C395	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V	
C401	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C402	1-126-285-11	ELECT	47uF	20%	16V	
C403	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C404	1-163-239-11	CERAMIC CHIP	33PF	5%	50V	
C405	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C406	1-126-285-11	ELECT	47uF	20%	16V	

MAIN

Ref.No.	Part No.	Description	Remark
C407	1-126-285-11	ELECT 47uF 20% 16V	
C408	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C409	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C410	1-126-285-11	ELECT 47uF 20% 16V	
C411	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C412	1-126-285-11	ELECT 47uF 20% 16V	
C413	1-126-285-11	ELECT 47uF 20% 16V	
C414	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C415	1-163-237-11	CERAMIC CHIP 27PF 5% 50V	
C417	1-163-227-11	CERAMIC CHIP 10PF 0.5PF 50V	
C501	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C502	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C503	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C504	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	
C531	1-163-077-91	CERAMIC CHIP 0.1uF 50V	
C532	1-126-285-11	ELECT 47uF 20% 16V	
C533	1-126-285-11	ELECT 47uF 20% 16V	
C534	1-163-077-91	CERAMIC CHIP 0.1uF 50V	
C535	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
C536	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C537	1-126-285-11	ELECT 47uF 20% 16V	
C538	1-126-285-11	ELECT 47uF 20% 16V	
C539	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C540	1-163-275-11	CERAMIC CHIP 0.001uF 5% 50V	
C551	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C552	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C553	1-126-157-11	ELECT 10uF 20% 16V	
C554	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C555	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C556	1-164-161-11	CERAMIC CHIP 0.0022uF 10% 100V	
C557	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C558	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	
C559	1-163-251-11	CERAMIC CHIP 100PF 5% 50V	
C561	1-126-295-11	ELECT 10uF 20% 35V	(AEP,G)
C562	1-163-038-00	CERAMIC CHIP 0.1uF 25V	(AEP,G)
C581	1-124-563-11	ELECT 2200uF 20% 25V	
C582	1-126-529-11	ELECT (B.P.) 0.47uF 20% 50V	
C583	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C602	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C605	1-124-234-00	ELECT 22uF 20% 16V	
C606	1-107-478-61	ELECT 47uF 20% 16V	
C607	1-107-478-61	ELECT 47uF 20% 16V	
C608	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C609	1-135-138-11	TANTAL. CHIP 10uF 10% 25V	
C610	1-135-138-11	TANTAL. CHIP 10uF 10% 25V	
C611	1-107-478-61	ELECT 47uF 20% 16V	
C612	1-125-701-11	DOUBLE LAYER 0.047F 5.5V	
C614	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	

Ref.No.	Part No.	Description	Remark
C615	1-126-288-11	ELECT 4.7uF 20% 16V	
C616	1-107-478-61	ELECT 47uF 20% 16V	
C617	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C620	1-107-454-61	ELECT 100uF 20% 6.3V	
C631	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C632	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C633	1-126-285-11	ELECT 47uF 20% 16V	
C634	1-126-285-11	ELECT 47uF 20% 16V	
C635	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C636	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C637	1-126-285-11	ELECT 47uF 20% 16V	
C638	1-126-285-11	ELECT 47uF 20% 16V	
C641	1-126-285-11	ELECT 47uF 20% 16V	
C642	1-126-285-11	ELECT 47uF 20% 16V	
C643	1-126-285-11	ELECT 47uF 20% 16V	
C644	1-126-285-11	ELECT 47uF 20% 16V	
C645	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C646	1-163-077-91	CERAMIC CHIP 0.1uF 50V	
C647	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C648	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C649	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C650	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C653	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C654	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C661	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C662	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C663	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C679	1-163-809-11	CERAMIC CHIP 0.047uF 10% 25V	
C680	1-164-489-11	CERAMIC CHIP 0.22uF 10% 16V	
C681	1-107-455-61	ELECT 22uF 20% 16V	
C682	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C683	1-107-455-61	ELECT 22uF 20% 16V	
C684	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C685	1-126-285-11	ELECT 47uF 20% 16V	
C686	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C687	1-107-455-61	ELECT 22uF 20% 16V	
C688	1-107-454-61	ELECT 100uF 20% 6.3V	
C689	1-126-285-11	ELECT 47uF 20% 16V	
C691	1-163-989-11	CERAMIC CHIP 0.033uF 10% 25V	
C692	1-107-478-61	ELECT 47uF 20% 16V	

< CONNECTOR >

*CNJ101	1-566-003-11	PIN, CONNECTOR (PC BOARD) 6P	
CNJ201	1-750-175-21	JACK, PIN 4P (FRONT/REAR LINE OUT)	
CNJ301	1-566-822-11	JACK (REMOTE IN)	
CNJ401	1-750-621-11	PLUG, CONNECTOR (14P-L)	
*CNJ501	1-506-986-11	PIN, CONNECTOR (PC BOARD) 4P	
CNJ520	1-580-907-11	PLUG, CONNECTOR (UNILINK IN CONTROL)	

Ref.No.	Part No.	Description	Remark
CNJ601	1-764-049-41	CONNECTOR, BOARD TO BOARD 26P	
*CNJ701	1-750-241-21	PIN, CONNECTOR (PC BOARD) 3P	
CNP101	1-691-280-11	CONNECTOR	

< TRIMMER >

Ref.No.	Part No.	Description	Remark
CT501	1-141-276-00	CAP, TRIMMER	

< DIODE >

Ref.No.	Part No.	Description	Remark
D301	8-719-971-18	DIODE 1SS318	
D302	8-719-971-18	DIODE 1SS318	
D303	8-719-041-79	DIODE MA721WA-TX	
D304	8-719-041-79	DIODE MA721WA-TX	
D305	8-719-423-01	DIODE MA8091H	
D501	8-719-914-43	DIODE DAN202K	
D502	8-719-404-46	DIODE MA110	
D510	8-719-977-54	DIODE DTZ16C	
D520	8-719-404-46	DIODE MA110	
D521	8-719-039-09	DIODE RD6.2ES-TPB1	
D522	8-719-039-09	DIODE RD6.2ES-TPB1	
D523	8-719-039-09	DIODE RD6.2ES-TPB1	
D524	8-719-039-13	DIODE RD6.8ES-TPB1	
D525	8-719-914-43	DIODE DAN202K	
D531	8-719-976-XX	DIODE DTZ5.1B-TT11	
D532	8-719-976-XX	DIODE DTZ5.1B-TT11	
D533	8-719-976-XX	DIODE DTZ5.1B-TT11	
D534	8-719-976-XX	DIODE DTZ5.1B-TT11	
D535	8-719-976-XX	DIODE DTZ5.1B-TT11	
D536	8-719-976-XX	DIODE DTZ5.1B-TT11	
D540	8-719-404-46	DIODE MA110	
D541	8-719-404-46	DIODE MA110	
D551	8-719-404-46	DIODE MA110	
D581	8-719-914-44	DIODE DAP202K	
D582	8-719-914-44	DIODE DAP202K	
D583	8-719-028-74	DIODE NSQ03A04	
D601	8-719-039-09	DIODE RD6.2ES-TPB1	
D602	8-719-039-09	DIODE RD6.2ES-TPB1	
D603	8-719-039-09	DIODE RD6.2ES-TPB1	
D604	8-719-039-09	DIODE RD6.2ES-TPB1	
D605	8-719-039-09	DIODE RD6.2ES-TPB1	
D606	8-719-039-09	DIODE RD6.2ES-TPB1	
D607	8-719-039-09	DIODE RD6.2ES-TPB1	
D609	8-719-039-13	DIODE RD6.8ES-TPB1	
D610	8-719-914-43	DIODE DAN202K	
D611	8-719-914-44	DIODE DAP202K	
D612	8-719-039-09	DIODE RD6.2ES-TPB1	
D613	8-719-977-54	DIODE DTZ16C	
D614	8-719-977-54	DIODE DTZ16C	
D615	8-719-017-67	DIODE MA8068-H	
D690	8-719-404-46	DIODE MA110	
D691	8-719-422-16	DIODE MA8039-L-TX	

< DC/DC CONVERTER >

Ref.No.	Part No.	Description	Remark
DD1	1-467-657-11	CONVERTER UNIT, DC/DC	

< IC >

Ref.No.	Part No.	Description	Remark
IC100	8-759-170-72	IC NJM5532MD-T1	
IC101	8-759-054-12	IC PQ09RA1	
IC110	8-759-170-72	IC NJM5532MD-T1	
IC130	8-759-711-82	IC NJM4580E	
IC151	8-752-063-44	IC CXA1646Q	
IC152	8-752-068-73	IC CXA1846M	
IC160	8-759-170-72	IC NJM5532MD-T1	
IC170	8-759-170-72	IC NJM5532MD-T1	
IC180	8-759-170-72	IC NJM5532MD-T1	
IC301	8-759-069-48	IC LA1061M	
IC302	8-759-823-81	IC LC7216M	
IC304	8-759-163-63	IC TDA7330BD-013TR (AEP,G)	
IC305	8-759-062-66	IC TC7S66F	
IC306	8-759-062-66	IC TC7S66F	
IC307	8-759-711-58	IC NJM78L05UA	
IC401	8-759-164-56	IC YSD221-ME2	
IC402	8-759-169-03	IC SM5843AS1-ET	
IC403	8-759-506-65	IC PCM67U-K	
IC501	8-759-266-15	IC uPD75518GF-185-3B9	
IC520	8-759-096-16	IC MM1175XFF	
IC551	8-759-259-09	IC MN1882417SNU2 (AEP,G)	
IC551	8-759-263-78	IC MN1882417SZP (US)	
IC552	8-759-710-79	IC NJM2107F	
IC560	8-759-168-53	IC LH5116N3 (AEP,G)	
IC561	8-759-038-46	IC SC7S00F (AEP,G)	
IC601	8-759-182-76	IC BA3910B-V3	
IC603	8-759-940-45	IC S-8054HN-CB	
IC631	8-759-711-58	IC NJM78L05UA	
IC632	8-759-045-17	IC NJM79L05UA	
IC633	8-759-711-58	IC NJM78L05UA	
IC680	8-759-231-53	IC TA7805S	

< JUMPER RESISTOR >

Ref.No.	Part No.	Description	Remark
JR500	1-216-295-00	METAL CHIP 0 5% 1/10W	

< COIL >

Ref.No.	Part No.	Description	Remark
L301	1-410-200-31	INDUCTOR CHIP 4.7uH	
L303	1-410-216-31	INDUCTOR CHIP 100uH	
L304	1-410-946-31	INDUCTOR CHIP 22uH	
L305	1-410-201-51	INDUCTOR CHIP 5.6uH	
L306	1-410-204-31	INDUCTOR CHIP 10uH (AEP,G)	

MAIN

Ref.No.	Part No.	Description	Remark
L401	1-410-946-31	INDUCTOR CHIP 22uH	
L402	1-410-946-31	INDUCTOR CHIP 22uH	
L403	1-410-946-31	INDUCTOR CHIP 22uH	
L404	1-410-946-31	INDUCTOR CHIP 22uH	
L501	1-410-946-31	INDUCTOR CHIP 22uH	
L502	1-410-946-31	INDUCTOR CHIP 22uH	
L503	1-410-946-31	INDUCTOR CHIP 22uH	
L504	1-410-946-31	INDUCTOR CHIP 22uH	
L561	1-410-946-31	INDUCTOR CHIP 22uH	(AEP,G)
L601	1-410-946-31	INDUCTOR CHIP 22uH	
L680	1-410-204-31	INDUCTOR CHIP 10uH	

< TRANSISTOR >

Ref.No.	Part No.	Description	Remark
Q101	8-729-920-21	TRANSISTOR DTC314TKH04	
Q102	8-729-920-21	TRANSISTOR DTC314TKH04	
Q161	8-729-202-38	TRANSISTOR 2SC3326N	
Q171	8-729-202-38	TRANSISTOR 2SC3326N	
Q181	8-729-202-38	TRANSISTOR 2SC3326N	
Q201	8-729-920-21	TRANSISTOR DTC314TKH04	
Q202	8-729-920-21	TRANSISTOR DTC314TKH04	
Q261	8-729-202-38	TRANSISTOR 2SC3326N	
Q271	8-729-202-38	TRANSISTOR 2SC3326N	
Q281	8-729-202-38	TRANSISTOR 2SC3326N	
Q305	8-729-216-22	TRANSISTOR 2SA1162-G	
Q306	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q307	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q308	8-729-424-08	TRANSISTOR UN2111	
Q309	8-729-421-22	TRANSISTOR UN2211	
Q310	8-729-021-94	TRANSISTOR 2SK1657-T1B	
Q311	8-729-920-85	TRANSISTOR 2SD1664-QR	
Q312	8-729-421-22	TRANSISTOR UN2211	
Q313	8-729-424-08	TRANSISTOR UN2111	(AEP,G)
Q314	8-729-421-22	TRANSISTOR UN2211	(AEP,G)
Q501	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q502	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q503	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q504	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q505	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q506	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q511	8-729-421-22	TRANSISTOR UN2211	
Q520	8-729-424-18	TRANSISTOR UN2113	
Q521	8-729-424-08	TRANSISTOR UN2111	
Q522	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q523	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q581	8-729-424-08	TRANSISTOR UN2111	
Q582	8-729-421-22	TRANSISTOR UN2211	
Q583	8-729-020-67	TRANSISTOR XN1A312-TX	
Q584	8-729-424-59	TRANSISTOR UN2212	
Q585	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q603	8-729-106-60	TRANSISTOR 2SB1115A	
Q604	8-729-424-59	TRANSISTOR UN2212	
Q605	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q606	8-729-421-22	TRANSISTOR UN2211	
Q607	8-729-422-87	TRANSISTOR 2SB1073-R	
Q608	8-729-424-59	TRANSISTOR UN2212	
Q620	8-729-424-59	TRANSISTOR UN2212	
Q621	8-729-106-60	TRANSISTOR 2SB1115A	
Q681	8-729-422-87	TRANSISTOR 2SB1073-R	
Q683	8-729-421-22	TRANSISTOR UN2211	
Q686	8-729-421-22	TRANSISTOR UN2211	
Q687	8-729-422-87	TRANSISTOR 2SB1073-R	
Q689	8-729-421-22	TRANSISTOR UN2211	
Q690	8-729-422-87	TRANSISTOR 2SB1073-R	
Q691	8-729-421-22	TRANSISTOR UN2211	
Q692	8-729-424-08	TRANSISTOR UN2111	
Q693	8-729-421-22	TRANSISTOR UN2211	
Q694	8-729-216-22	TRANSISTOR 2SA1162-G	
Q695	8-729-421-19	TRANSISTOR UN2213	
Q696	8-729-216-22	TRANSISTOR 2SA1162-G	

< RESISTOR >

Ref.No.	Part No.	Description	Remark
R111	1-208-486-61	METAL GLAZE 1K 2% 1/8W	
R112	1-208-486-61	METAL GLAZE 1K 2% 1/8W	
R113	1-208-496-61	METAL GLAZE 2.7K 2% 1/8W	
R114	1-216-238-00	METAL GLAZE 47K 2% 1/8W	
R121	1-208-498-61	METAL GLAZE 3.3K 2% 1/8W	
R122	1-216-238-00	METAL GLAZE 47K 2% 1/8W	
R131	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R133	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R134	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R135	1-216-073-00	METAL CHIP 10K 5% 1/10W	(US)
R136	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R137	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R138	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R139	1-216-073-00	METAL CHIP 10K 5% 1/10W	(AEP)
R139	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(G)
R141	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R142	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R143	1-216-075-00	METAL CHIP 12K 5% 1/10W	(US)
R144	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R161	1-208-488-61	METAL GLAZE 1.2K 2% 1/8W	
R162	1-208-498-61	METAL GLAZE 3.3K 2% 1/8W	
R163	1-208-470-61	METAL GLAZE 220 2% 1/8W	
R164	1-208-559-61	METAL GLAZE 22K 2% 1/8W	
R165	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R171	1-208-488-61	METAL GLAZE 1.2K 2% 1/8W	

Ref.No.	Part No.	Description	Remark
R172	1-208-498-61	METAL GLAZE 3.3K 2% 1/8W	
R173	1-208-470-61	METAL GLAZE 220 2% 1/8W	
R174	1-208-559-61	METAL GLAZE 22K 2% 1/8W	
R175	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R181	1-208-488-61	METAL GLAZE 1.2K 2% 1/8W	
R182	1-208-498-61	METAL GLAZE 3.3K 2% 1/8W	
R183	1-208-470-61	METAL GLAZE 220 2% 1/8W	
R184	1-208-559-61	METAL GLAZE 22K 2% 1/8W	
R185	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R211	1-208-486-61	METAL GLAZE 1K 2% 1/8W	
R212	1-208-486-61	METAL GLAZE 1K 2% 1/8W	
R213	1-208-496-61	METAL GLAZE 2.7K 2% 1/8W	
R214	1-216-238-00	METAL GLAZE 47K 2% 1/8W	
R221	1-208-498-61	METAL GLAZE 3.3K 2% 1/8W	
R222	1-216-238-00	METAL GLAZE 47K 2% 1/8W	
R231	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R233	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R234	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R235	1-216-073-00	METAL CHIP 10K 5% 1/10W	(US)
R236	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R237	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R238	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R239	1-216-073-00	METAL CHIP 10K 5% 1/10W	(AEP)
R239	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	(G)
R241	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R242	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R243	1-216-075-00	METAL CHIP 12K 5% 1/10W	(US)
R244	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R261	1-208-488-61	METAL GLAZE 1.2K 2% 1/8W	
R262	1-208-498-61	METAL GLAZE 3.3K 2% 1/8W	
R263	1-208-470-61	METAL GLAZE 220 2% 1/8W	
R264	1-208-559-61	METAL GLAZE 22K 2% 1/8W	
R265	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R271	1-208-488-61	METAL GLAZE 1.2K 2% 1/8W	
R272	1-208-498-61	METAL GLAZE 3.3K 2% 1/8W	
R273	1-208-470-61	METAL GLAZE 220 2% 1/8W	
R274	1-208-559-61	METAL GLAZE 22K 2% 1/8W	
R275	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R281	1-208-488-61	METAL GLAZE 1.2K 2% 1/8W	
R282	1-208-498-61	METAL GLAZE 3.3K 2% 1/8W	
R283	1-208-470-61	METAL GLAZE 220 2% 1/8W	
R284	1-208-559-61	METAL GLAZE 22K 2% 1/8W	
R285	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R301	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R302	1-216-829-11	METAL CHIP 4.7K 5% 1/16W	
R304	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R305	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R306	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R307	1-216-097-00	METAL CHIP 100K 5% 1/10W	

Ref.No.	Part No.	Description	Remark
R308	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R309	1-218-293-11	METAL GLAZE 24K 5% 1/16W	
R310	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R311	1-216-842-11	METAL CHIP 56K 5% 1/16W	
R312	1-216-845-11	METAL CHIP 100K 5% 1/16W	
R313	1-216-857-11	METAL CHIP 1M 5% 1/16W	
R314	1-216-840-11	METAL CHIP 39K 5% 1/16W	
R315	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R316	1-216-837-11	METAL CHIP 22K 5% 1/16W	
R317	1-216-833-11	METAL CHIP 10K 5% 1/16W	
R318	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R319	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R320	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R321	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R322	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R323	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R324	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R325	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R326	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R327	1-216-045-00	METAL CHIP 680 5% 1/10W	
R342	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(AEP,G)
R343	1-216-129-00	METAL CHIP 2.2M 5% 1/10W	(AEP,G)
R344	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R346	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R347	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R349	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R350	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R356	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R401	1-216-025-00	METAL CHIP 100 5% 1/10W	
R402	1-216-025-00	METAL CHIP 100 5% 1/10W	
R406	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R407	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R408	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R501	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R502	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R503	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R504	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R506	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R507	1-216-097-00	METAL CHIP 100K 5% 1/10W	(AEP,G)
R508	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R509	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R510	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R511	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R512	1-208-494-61	METAL GLAZE 2.2K 2% 1/8W	
R513	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R519	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R520	1-216-089-00	METAL GLAZE 47K 5% 1/10W	
R521	1-216-073-00	METAL CHIP 10K 5% 1/10W	

MAIN

Ref.No.	Part No.	Description				Remark
R522	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R523	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R524	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R525	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R526	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R527	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R531	1-216-097-00	METAL CHIP	100K	5%	1/10W	(US)
R532	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R533	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R534	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R535	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R538	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R539	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R540	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R543	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R544	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R545	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R551	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R552	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R553	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R554	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R555	1-216-097-00	METAL CHIP	100K	5%	1/10W	(G)
R556	1-216-097-00	METAL CHIP	100K	5%	1/10W	(US)
R557	1-216-119-00	METAL CHIP	820K	5%	1/10W	
R558	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R559	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R560	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R561	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R562	1-216-097-00	METAL CHIP	100K	5%	1/10W	(AEP,G)
R563	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R564	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R565	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R566	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R567	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R568	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R569	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R570	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R571	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R572	1-216-113-00	METAL CHIP	470K	5%	1/10W	(AEP,G)
R573	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R574	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R575	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R576	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R580	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R581	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R582	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R583	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R584	1-216-073-00	METAL CHIP	10K	5%	1/10W	

Ref.No.	Part No.	Description				Remark
R585	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R588	1-216-093-00	METAL CHIP	68K	5%	1/10W	
R590	1-216-097-00	METAL CHIP	100K	5%	1/10W	(AEP,G)
R591	1-216-097-00	METAL CHIP	100K	5%	1/10W	(US,AEP)
R592	1-216-097-00	METAL CHIP	100K	5%	1/10W	(US)
R593	1-216-049-00	METAL CHIP	100	5%	1/10W	
R594	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R595	1-216-065-00	METAL CHIP	4.7K	5%	1/10W	
R601	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R602	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R603	1-216-025-00	METAL CHIP	100	5%	1/10W	
R604	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R605	1-216-025-00	METAL CHIP	100	5%	1/10W	
R606	1-216-025-00	METAL CHIP	100	5%	1/10W	
R607	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R608	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R610	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R611	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R612	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R614	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R615	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R616	1-216-083-00	METAL CHIP	27K	5%	1/10W	
R617	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R618	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R619	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R620	1-216-049-00	METAL CHIP	1K	5%	1/10W	
R621	1-216-037-00	METAL CHIP	330	5%	1/10W	
R622	1-216-089-00	METAL GLAZE	47K	5%	1/10W	
R623	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R624	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R625	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R626	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R627	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R633	1-216-113-00	METAL CHIP	470K	5%	1/10W	
R641	1-216-011-00	METAL CHIP	27	5%	1/10W	
R642	1-216-011-00	METAL CHIP	27	5%	1/10W	
R643	1-216-011-00	METAL CHIP	27	5%	1/10W	
R644	1-216-011-00	METAL CHIP	27	5%	1/10W	
R681	1-218-262-11	METAL GLAZE	2.7	10%	1/2W	
R682	1-218-262-11	METAL GLAZE	2.7	10%	1/2W	
R683	1-218-262-11	METAL GLAZE	2.7	10%	1/2W	
R684	1-218-262-11	METAL GLAZE	2.7	10%	1/2W	
R685	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R686	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R687	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R688	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R689	1-216-057-00	METAL CHIP	2.2K	5%	1/10W	
R690	1-216-073-00	METAL CHIP	10K	5%	1/10W	
R692	1-216-037-00	METAL CHIP	330	5%	1/10W	

Ref.No.	Part No.	Description			Remark
R693	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R694	1-216-089-00	METAL GLAZE	47K	5%	1/10W
R696	1-216-073-00	METAL CHIP	10K	5%	1/10W
R697	1-216-073-00	METAL CHIP	10K	5%	1/10W

< VARIABLE RESISTOR >

Ref.No.	Part No.	Description
RV551	1-238-605-31	RES, ADJ, CARBON 470K

< SWITCH >

Ref.No.	Part No.	Description
SW301	1-572-272-11	SWITCH, SLIDE (FM DIVERSITY)
SW501	1-572-272-11	SWITCH, SLIDE (POWER SELECT)
SW502	1-572-272-11	SWITCH, SLIDE (DIGITAL/ANALOG)
SW503	1-572-288-11	SWITCH, PUSH (RELEASE)

< TUNER >

Ref.No.	Part No.	Description
TU1	A-3282-003-A	TUNER (TUX-001A) (FM/AM)

< VIBRATOR >

Ref.No.	Part No.	Description
X301	1-567-848-11	VIBRATOR, CRYSTAL (7.2MHz)
X303	1-579-242-41	VIBRATOR, CRYSTAL (4.3MHz) (AEP,G)
X401	1-567-820-11	VIBRATOR, CRYSTAL (16.9344MHz)
X501	1-567-821-11	VIBRATOR, CRYSTAL (4.19MHz)
X551	1-579-952-21	VIBRATOR, CERAMIC (8MHz)

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* A-3295-984-A MD BOARD, COMPLETE

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< CAPACITOR >

Ref.No.	Part No.	Description			Remark
C2	1-163-243-11	CERAMIC CHIP	47PF	5%	50V
C3	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C4	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C5	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C6	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C7	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C8	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C9	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C10	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C11	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C12	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C13	1-163-011-11	CERAMIC CHIP	0.0015uF	10%	50V
C14	1-163-251-11	CERAMIC CHIP	100PF	5%	50V
C15	1-126-191-11	ELECT	0.47uF	20%	50V
C16	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C17	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C18	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C19	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C20	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C21	1-164-232-11	CERAMIC CHIP	0.01uF		50V
C22	1-164-346-11	CERAMIC CHIP	1uF		16V
C23	1-164-346-11	CERAMIC CHIP	1uF		16V
C24	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C25	1-163-089-00	CERAMIC CHIP	6PF		50V
C26	1-163-085-00	CERAMIC CHIP	2PF		50V
C27	1-164-492-11	CERAMIC CHIP	0.15uF	10%	16V
C29	1-135-166-21	TANTALUM CHIP	47uF	10%	10V
C30	1-128-361-11	ELECT CHIP	470uF	20%	10V
C31	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C32	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C33	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C36	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C37	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C38	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C42	1-163-809-11	CERAMIC CHIP	0.047uF	10%	25V
C43	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C44	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C48	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V
C49	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C50	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C51	1-164-161-11	CERAMIC CHIP	0.0022uF	10%	100V

< CONNECTOR >

Ref.No.	Part No.	Description
*CN1	1-766-198-21	CONNECTOR, FPC 26P
CN2	1-565-728-11	CONNECTOR, FPC 17P
*CN3	1-750-159-21	CONNECTOR, FPC 5P
*CN4	1-750-160-21	CONNECTOR, FPC 7P
*CN5	1-580-055-21	PIN, CONNECTOR 2P

< IC >

Ref.No.	Part No.	Description	
IC1	8-752-069-94	IC	CXA1791N-T4
IC2	8-752-361-90	IC	CXD2515Q
IC5	8-759-087-53	IC	MPC1730MR2
IC6	8-759-087-55	IC	MPC1732MR2
IC7	8-759-008-67	IC	MC14066BF
IC8	8-759-505-70	IC	L2726
IC9	8-759-823-87	IC	LB1638M
IC10	8-759-266-16	IC	uPD75517GF-260-3B9

< COIL >

Ref.No.	Part No.	Description	
L2	1-412-058-11	INDUCTOR CHIP	10uH
L3	1-412-058-11	INDUCTOR CHIP	10uH
L4	1-412-058-11	INDUCTOR CHIP	10uH

< TRANSISTOR >

Ref.No.	Part No.	Description	
Q1	8-729-024-26	PHOTO TRANSISTOR	CPT-181S-C-TU
Q2	8-729-024-26	PHOTO TRANSISTOR	CPT-181S-C-TU
Q4	8-729-024-26	PHOTO TRANSISTOR	CPT-181S-C-TU
Q5	8-729-141-48	TRANSISTOR	2SB624-BV345

MD MOTOR

Ref.No.	Part No.	Description	Remark
Q6	8-729-011-95	TRANSISTOR RN2426	
Q7	8-729-901-05	TRANSISTOR DTA124EK	
Q8	8-729-901-01	TRANSISTOR DTC144EK	
Q9	8-729-901-01	TRANSISTOR DTC144EK	
Q10	8-729-901-01	TRANSISTOR DTC144EK	
Q11	8-729-901-05	TRANSISTOR DTA124EK	
		< RESISTOR >	
R1	1-216-024-00	METAL GLAZE 91 5% 1/10W	
R3	1-216-309-00	METAL CHIP 5.6 5% 1/10W	
R4	1-216-309-00	METAL CHIP 5.6 5% 1/10W	
R5	1-216-079-00	METAL CHIP 18K 5% 1/10W	
R6	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R7	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R8	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R9	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R10	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R11	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R12	1-216-025-00	METAL CHIP 100 5% 1/10W	
R13	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R14	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R15	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R16	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R17	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R18	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R19	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R20	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R21	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R22	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R23	1-216-037-00	METAL CHIP 330 5% 1/10W	
R24	1-216-037-00	METAL CHIP 330 5% 1/10W	
R25	1-216-037-00	METAL CHIP 330 5% 1/10W	
R26	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R27	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R28	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R29	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R30	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R31	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R32	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R38	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R39	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R45	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R46	1-216-101-00	METAL CHIP 150K 5% 1/10W	
R47	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R48	1-216-295-00	METAL CHIP 0 5% 1/10W	
R49	1-216-295-00	METAL CHIP 0 5% 1/10W	
R50	1-216-295-00	METAL CHIP 0 5% 1/10W	
R51	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R52	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R53	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R54	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R55	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R59	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R60	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R62	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R63	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R64	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R66	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R69	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R70	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R80	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R81	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R82	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R83	1-216-093-00	METAL CHIP 68K 5% 1/10W	
R84	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R85	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R86	1-216-097-00	METAL CHIP 100K 5% 1/10W	
		< VARIABLE RESISTOR >	
RV1	1-238-091-11	RES, ADJ, CERMET 22K	
RV2	1-238-091-11	RES, ADJ, CERMET 22K	
		< SWITCH >	
SW1	1-571-754-31	SWITCH, PUSH (1 KEY) (DISC SET)	
		< THERMISTOR >	
TH1	1-806-715-11	THERMISTOR	
TH2	1-806-715-11	THERMISTOR	
		< VIBRATOR >	
X1	1-579-951-11	VIBRATOR, CERAMIC (CHIP TYPE) (6MHz)	

****

Ref.No.	Part No.	Description	Remark
*	1-650-144-11	MOTOR BOARD ***********	
	1-646-402-11	MOTOR FLEXIBLE BOARD	
		< CONNECTOR >	
*CNJ303	1-750-160-21	CONNECTOR, FPC 7P	
		< SWITCH >	
S301	1-572-467-21	SWITCH, PUSH (1 KEY) (LIMIT)	

****

Ref.No.	Part No.	Description	Remark
*	1-651-743-11	OPTICAL BOARD *************	
		< JACK >	
CNJ901	1-695-546-11	PLUG, CONNECTOR (DIGITAL OUT)	
		< CONNECTOR >	
*CNP401	1-750-241-21	PIN, CONNECTOR (PC BOARD) 3P	

****

Ref.No.	Part No.	Description	Remark
*	1-651-742-11	RESET BOARD ***********	
		< CONNECTOR >	
CNJ402	1-750-622-11	SOCKET, CONNECTOR 14P	
*CNJ802	1-691-558-21	SOCKET, CONNECTOR 12P	
		< SWITCH >	
SW901	1-570-909-11	SWITCH, TACTIL (REFLOW TYPE) (RESET)	

****

Ref.No.	Part No.	Description	Remark
*	A-3222-716-A	SENSOR BOARD, COMPLETE **********************	
		< DIODE >	
D801	8-719-045-75	DIODE CL-200IR-X-TU	
D802	8-719-045-75	DIODE CL-200IR-X-TU	
D804	8-719-045-75	DIODE CL-200IR-X-TU	
		< RESISTOR >	
R801	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R802	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R804	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
		< SWITCH >	
S901	1-692-441-11	SWITCH, MICROPHONE (DISC DET)	

****

Ref.No.	Part No.	Description	Remark
		MISCELLANEOUS *************	
5	1-649-296-11	MD FLEXIBLE BOARD	
⚠152	8-848-283-11	DEVICE, OPTICAL KSS-313A	
156	1-646-402-11	MOTOR FLEXIBLE BOARD	
CNJ1	1-751-657-11	CORD (WITH CONNECTOR) (RCA)	(SUB OUT, UNILINK IN)
CNJ2	1-751-721-11	CORD (WITH CONNECTOR) (ANT)	(MAIN, SUB)
F1	1-532-731-11	FUSE (BRADE TYPE) (3A)	
F2	1-532-731-11	FUSE (BRADE TYPE) (3A)	
M901	X-3368-280-1	MOTOR (SPINDLE) ASSY	
M902	A-3252-585-A	MOTOR (SL) ASSY (SLED)	
M903	A-3252-580-A	MOTOR (L) ASSY (LOADING)	

****

Ref.No.	Part No.	Description	Remark
		ACCESSORIES & PACKING MATERIALS *******************************	
	1-467-165-21	REMOTE COMMANDER (RM-X33)	
	1-765-447-11	CORD (WITH CONNECTOR) (POWER)	
	3-758-241-11	MANUAL, INSTRUCTION (ENGLISH, FRENCH, GERMAN, ITALIAN)	
	3-758-241-21	MANUAL, INSTRUCTION (ENGLISH) (US)	
	3-758-241-41	MANUAL, INSTRUCTION (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (AEP)	
	3-758-242-11	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, ITALIAN) (AEP, G)	
	3-758-242-21	MANUAL, INSTRUCTION, INSTALL (ENGLISH) (US)	
	3-758-242-41	MANUAL, INSTRUCTION, INSTALL (SPANISH, DUTCH, SWEDISH, PORTUGUESE) (AEP)	
	3-758-242-61	MANUAL, INSTRUCTION, INSTALL (ENGLISH, FRENCH, GERMAN, ITALIAN, SPANISH, DUTCH, SWEDISH, PORTUGUESE) (AEP, G)	
*	3-912-752-01	INDIVIDUAL CARTON (US)	
*	3-912-754-01	CUSHION (UPPER)	
*	3-912-755-01	CUSHION (LOWER)	
*	3-912-756-01	INDIVIDUAL CARTON (AEP)	
*	1-912-758-01	INDIVIDUAL CARTON (G)	
*	4-885-838-00	LABEL, CLASS 1 (AEP)	
	X-3366-405-1	SCREW ASSY (EXP), FITTING	
	X-3366-925-1	BRACKET ASSY	
	X-3367-795-1	CASE ASSY	

****

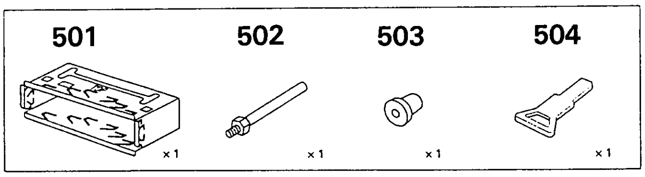
HARDWARE LIST

Ref.No.	Part No.	Description
#1	7-621-772-10	SCREW +B 2X4
#2	7-685-647-79	SCREW +P 3X10 TYPE2 SLIT
#3	7-627-554-07	SCREW, PRECISION +P 2X2.2
#4	7-621-770-67	SCREW +P 2.6X6
#5	7-621-255-25	SCREW +P 2X4
#6	7-624-101-01	STOP RING 1.2 (E TYPE)
#7	7-685-105-19	SCREW +P 2X8 TYPE2 NON-SLIT
#8	7-627-553-18	SCREW, PRECISION +P 2X2
#9	7-627-553-37	SCREW, PRECISION +P 2X3
#10	7-621-772-08	SCREW +B 2X3
#11	7-627-552-07	SCREW, PRECISION +P 1.7X2.5
#12	7-627-552-47	SCREW, PRECISION +P 1.7X4
#13	7-627-553-67	SCREW, PRECISION +P 2X5
#14	7-621-771-06	SCREW +B 2X5
#15	7-621-772-60	SCREW +B 2X12

****

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

Ref.No.	Part No.	Description	Remark
		MOUNTING HARDWARE *****************	



Ref.No.	Part No.	Description	Remark
∗501	X-3366-235-1	FRAME ASSY, FITTING	
502	3-386-828-01	SCREW, FITTING	
503	3-349-410-01	BUSHING	
504	3-388-078-01	KEY	

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Mobile Electronics Group

9-959-333-11

CDX-900/900RDS

SONY®
SERVICE MANUAL

US Model
CDX-900
AEP Model
CDX-900RDS

SUPPLEMENT-1

File this supplement with the service manual.

1. **EXPLODED VIEWS**
2. **ELECTRICAL PARTS LIST**

☞ : Corrected portion

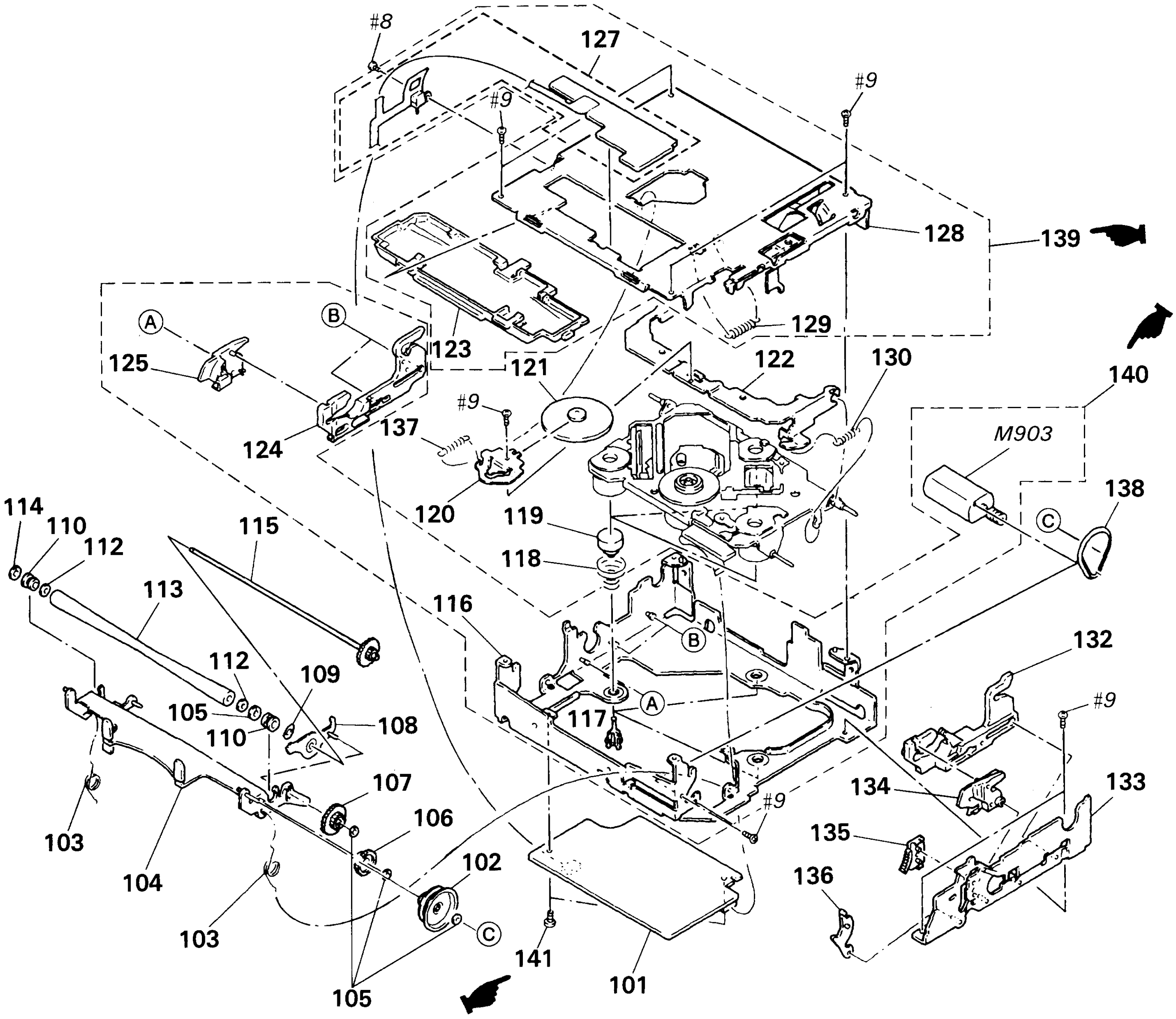
SECTION 6
EXPLODED VIEWS

(Service Manual See page 67–70)

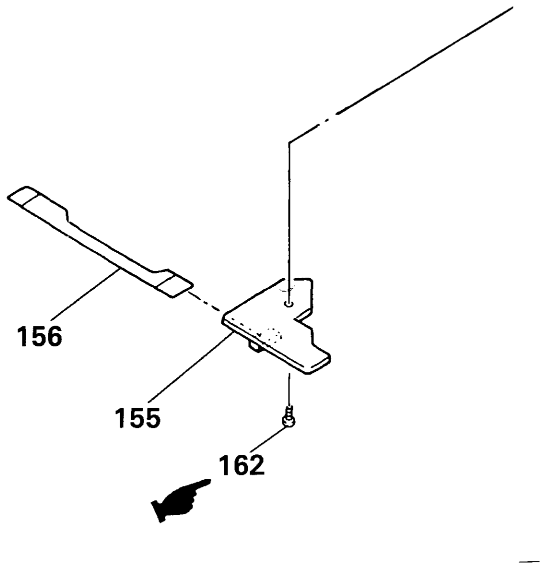
Page	Ref. No.	Incorrect	Correct
67	13	*3-386-597-01 PLATE, LOCK	*3-386-597-11 PALTE, LOCK
68	64	3-905-846-02 FILTER (RAY CATCHER)	3-905-846-01 FILTER (RAY CATCHER)
69	102	3-384-894-02 GEAR (R1)	3-384-894-01 GEAR (R1)
69	118	3-907-588-01 SPRING (FL2)	3-907-588-11 SPRING (FL2)
69	119	3-384-814-01 DAMPER	3-384-914-01 DAMPER
69	121	*3-384-918-01 RETAINER (DISC)	*3-384-918-11 RETAINER (DISC)
69	122	3-384-908-11 ARM, CHUCKING	*3-384-908-21 ARM, CHUCKING
69	128	*X-3366-854-1 CHASSIS (T) ASSY	*X-3368-597-1 CHASSIS (T) ASSY
69	133	*X-3365-911-1 CHASSIS (R) ASSY	*X-3366-853-1 CHASSIS (R) ASSY
69	139	———	*A-3252-934-A CHASSIS (T) BLOCK ASSY
69	140	———	*A-3252-936-A CHASSIS (M) BLOCK ASSY
69	141	———	3-918-103-01 SCREW (TOOTH) (+P 2)
70	157	*X-3365-916-1 CHASSIS (OPT) ASSY (OUTSERT)	*X-3366-855-1 CHASSIS (OPT) ASSY (OUTSERT)
70	162	———	3-918-103-11 SCREW (TOOTH) (+P 2)

Note:
- Items marked " * " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

6-3. MD SECTION-1 (MG-215-130) (Service manual see page 69.)

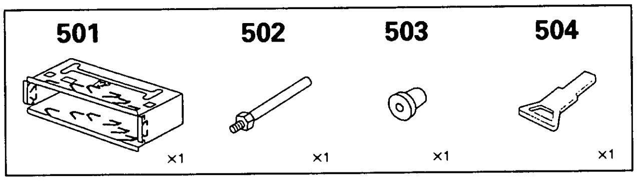
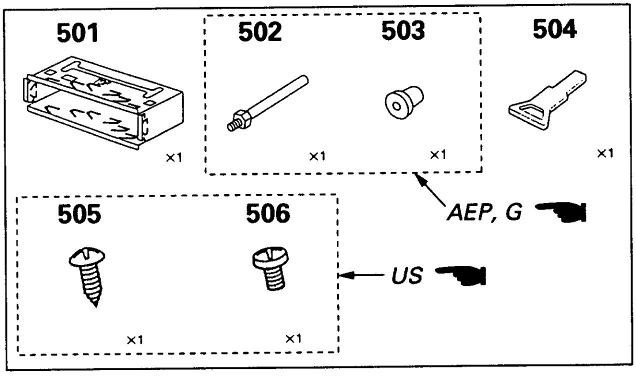


6-4. MD SECTION-2 (MG-215-130) (Service manual see page 70.)



SECTION 7
ELECTRICAL PARTS LIST

(Service Manual See page 81, 82)

<table>
<tr><th colspan="3">ACCESSORIES & PACKING MATERIALS</th></tr>
<tr><th>Page</th><th>Incorrect</th><th>Correct</th></tr>
<tr><td>81</td><td>———</td><td>3-355-210-11 COVER (2), PIN JACK</td></tr>
<tr><td></td><td>3-758-241-21 MANUAL, INSTRUCTION (ENGLISH) (US)</td><td>3-758-241-22 MANUAL, INSTRUCTION (ENGLISH) (US)</td></tr>
<tr><td></td><td>3-758-242-21 MANUAL, INSTRUCTION, INSTALL (ENGLISH) (US)</td><td>3-758-242-22 MANUAL, INSTRUCTION, INSTALL (ENGLISH) (US)</td></tr>
<tr><td></td><td>*1-912-758-01 INDIVIDUL CARTON (G)</td><td>*3-912-758-01 INDIVIDUL CARTON (G)</td></tr>
<tr><td></td><td>X-3366-405-1 SCREW ASSY (EXP), FITTING</td><td>X-3366-405-1 SCREW ASSY (EXP), FITTING (AEP, G)</td></tr>
<tr><td></td><td>———</td><td>X-3368-725-1 SCREW ASSY, FITTING (US)</td></tr>
<tr><th colspan="3">HARDWARE LIST</th></tr>
<tr><td>81</td><td>#7 7-685-105-19 SCREW +P 2X8 TYPE2 NON-SLIT</td><td>#7 7-685-106-19 SCREW +P 2X10 TYPE2 NON-SLIT</td></tr>
<tr><td></td><td>#10 7-621-772-08 SCREW +B 2X3</td><td>———</td></tr>
<tr><td></td><td>#14 7-621-771-06 SCREW +B 2X5</td><td>———</td></tr>
<tr><th colspan="3">MOUNTING HARDWARE</th></tr>
<tr><td>82</td><td>
 </td><td>

501
502
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AEP, G
505
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US
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<tr><td></td><td>*501 X-3366-235-1 FRAME ASSY, FITTING</td><td>*501 3-916-161-01 FRAME, FITTING</td></tr>
<tr><td></td><td>502 3-386-828-01 SCREW, FITTING</td><td>502 3-386-828-01 SCREW, FITTING (AEP, G)</td></tr>
<tr><td></td><td>503 3-349-410-01 BUSHING</td><td>503 3-349-410-01 BUSHING (AEP, G)</td></tr>
<tr><td></td><td>———</td><td>505 3-915-917-01 SCREW (4X12), +P (US)</td></tr>
<tr><td></td><td>———</td><td>506 7-682-160-01 SCREW +P 4X6 (US)</td></tr>
</table>

Note: • Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

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